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THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

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Kelvinator Corp. Shows $357,297 Quarterly Profit

Burritt Reports Increase In Sales Volume of All Products

DETROIT—Kelvinator Corp reports a net profit of $357,297, after all charges, including depreciation and reserve for Federal income tax, for the quarter ended March 31, 1935.

This compares with net profit of $305,517 for the same period of the preceding year and results in a net profit of $66,975 for the first half of the fiscal year as compared with a loss of $36,419 for the first half of the 1934 fiscal year.

H. W. Burritt, vice president in charge of sales, in discussing the report, pointed out that while this profit reflects an unusually early beginning of the spring sales season, present reports from distributors and dealers indicate that volume is continuing to increase and that the heaviest months—April, May, and June, should send the industry's volume to a point which will virtually assure a new record.

"Significant in connection with Kelvinator's own 1935 volume is that increases are being noted in the sale of all products," Mr. Burritt said. "Domestic electric refrigerators, commercial refrigeration equipment, beverage coolers, and ice cream cabinets all are showing gains, while the company's 1935 air-conditioning program is beginning to have a considerable effect on sales volume in that division."

9 Air Conditioners Sold in Milwaukee

MILWAUKEE—The total of 19 air-conditioning installations made in this city during 1934 exceeded last year's total by eight and came within one of equaling the total number of installations made prior to 1933.

Residential air conditioning took a sudden leap upward during 1934 as compared with installations of former years. Eleven of the 19 installations

(*Concluded on Page 13, Column 1*)

Melchior Opens Branch Office in Baltimore

BALTIMORE—A new branch office and warehouse, occupying a space of 8,000 sq. ft. has been opened here by Melchior, Armstrong Dessau Co., Inc., suppliers of refrigeration and heating parts.

C. C. Storm, promotion manager of the home office of the company in New York City, will be in charge. Cecil Boling, former engineer of the Boston branch of the organization, is now the Baltimore manager.

Southern salesmen—Messrs. Wright, Carlson, Travis, Booth, and Bosarge—who formerly worked out of the Philadelphia branch, will now operate from Baltimore.

Logan Gregg to Distribute F-M Line in Pittsburgh

PITTSBURGH—Logan Gregg Hardware Co. here has been appointed distributor for refrigerators, radios, washing machines, and ironers made by Fairbanks-Morse Home Appliances, Inc.

The distributor's territory will cover 25 counties in Pennsylvania, five counties in Ohio, and four counties in West Virginia.

Officers of the hardware company are R. M. Repp, president; Earl Mann, vice president; Cyrus Lewis, vice president; C. H. Markel, buyer of radio and refrigeration.

Duncombe Appointed to Cooper Promotion Staff

CHICAGO—John S. Duncombe, former store manager for R. Cooper, Jr., Inc., G-E distributor here, has been appointed to the sales promotion division of the organization here. He will manage and promote national and local sales campaigns in the Cooper territory.

Forum Discussions To Be Feature of R.M.A. Program

WASHINGTON, D. C.—Preliminary program plans have been completed for the spring meeting of the Refrigerating Machinery Association, to be held at "The Homestead," Hot Springs, Va., May 23, 24, and 25. The Air Conditioning Manufacturers Association will meet in the afternoon of the first day of the convention, it has been announced.

Feature of this year's convention will be open forum discussions by the members of the policies which are to govern the future work of the association.

Stuart E. Lauer, York Ice Machinery Corp., will lead the discussion of "Fair Trade Practice Cooperation." Discussion of "Employee Relationship" will be in charge of Emil Vilter, Vilter Mfg. Co., and A. H. Baer, Carbondale Machine Corp., will be chairman of the discussion of "Product Standardization."

On the morning of the opening day of the convention, the RMA will elect its code authority for the coming year. The main business meeting of the three-day convention will be held on the morning of May 24, under the direction of D. Norris Benedict, Frick Co., Inc. Theme of this meeting will be "Looking Forward."

Prices on Grunows Reduced in Detroit

DETROIT—Prices on Grunow electric refrigerators here have been reduced, according to a recent advertisement in the *Detroit Evening Times* by People's Outfitting Co., local department store.

The 1935 4.78-cu. ft. Grunow, formerly $139.50, is now offered by the store at $119.50; the 5.7-cu. ft. model, formerly $179.50, has been reduced to $149.50; and the deluxe 5.1-cu. ft. model, formerly $179.50, to $159.50.

A "coin-a-day" electric clock is included with the refrigerator. Each day, the purchaser drops a coin into the clock, and once a month the bank-clock is brought to the store, and its contents deposited as an instalment on the refrigerator. When the model is paid for, the clock becomes the property of the purchaser.

Lipman Markets 2 New Ceiling Conditioners

BELOIT, Wis.—Two new suspended ceiling-type comfort cooling units have just been placed on the market by the General Refrigeration Sales Co., manufacturer of Lipman refrigeration and air-conditioning equipment.

The units, models CU-2001 and CU-2002 in the Lipman line, are similar in appearance, with the exception that the first is not fitted with supply grilles, being intended for installation where duct work is required. The second is for installation without duct work.

Cooling coil assemblies in the two units are identical, and both models have the standard Lipman 5-ton evaporator. Cooling coil accessories consist of thermo expansion valve, liquid sight glass, heat interchanger, and liquid line filter.

All refrigerant connections inside the units are complete, and the liquid and suction lines are brought out at one end. Suction and liquid line connections terminate in sweat joint ends. Outside dimension of the suction line is 1⅛ in., and of the liquid line, ⅝ in. Drain connection in the evaporator drip pan is ½ in. female pipe thread.

The blower fans are double inlet, multi-vane centrifugal type, and are

(*Concluded on Page 13, Column 2*)

Tuten & Long Distributes Spartons in Georgia

SAVANNAH, Ga.—Tuten & Long of this city is now distributor for Sparton electric refrigerators, manufactured by the Sparks-Withington Co. of Jackson, Mich.

The 16 counties in the territory of the new distributor are: Screven, Jenkins, Emanuel, Treutlen, Montgomery, Toombs, Tattnall, Long, Liberty, Bryan, Evans, Candler, Bulloch, Effingham, Chatham, and Glynn.

A.S.R.E. Spring Meeting Plans Are Completed

Technical Session gram Arranged; 'Fiesta' Heads Entertainment Features

DETROIT—Program for the technical sessions of the 22nd spring meeting of the American Society of Refrigerating Engineers, to be held here May 22, 23, and 24, has been completed, it was announced last week.

Three technical sessions will be held on Wednesday, Thursday, and Friday mornings at the Statler hotel, the papers scheduled comprising a well-rounded report on significant new developments in air conditioning, commercial refrigeration, and progress in standards.

The Detroit convention committee, under the chairmanship of George Bright, has arranged a full program of entertainment, including a "Refrigeration Fiesta" on Wednesday evening at the home of ELECTRIC REFRIGERATION NEWS, with members of the NEWS staff acting as hosts to refrigerating engineers and their families and guests, and to Detroit members of the A.S.H.V.E. and their wives.

Wednesday afternoon, May 22, the A.S.R.E. crowd will be taken on an inspection trip to the Ford, Kelvinator or Plymouth plants, and Thursday afternoon will be devoted to a trip to Henry Ford's Greenfield Village, ending with dinner at the Dearborn Inn. The speaker at that event will be William B. Stout, president of the Society of Automotive Engineers.

Attractive plans have been made for the entertainment of women guests by the ladies' committee, under the direction of Miss Elizabeth Bright. A luncheon and fashion show on the first day of the convention, the "Refrigeration Fiesta," and the trip to Greengeld Village will be supplemented with tours to Detroit's famous Art Museum, a shopping trip ending in a luncheon at Hudson's, golf matches, and bridge.

The complete convention program:

Wednesday, May 22

9:00 a. m.—Registration.
10:00 a. m.—First session.
Topic: Air conditioning.
Chairman: Harry Harrison, president, A.S.R.E.
"Air Conditioning and Odor Control," Philip Drinker, Harvard School of Public Health, Cambridge, Mass.
"Window Glass as Insulation," C. D. Haven, Thermopane Co., Milwaukee.
"Rational Development and Rating of Extended Air Cooling Surfaces," H. B. Pownall, York Ice Machinery Corp., York, Pa.
Inspection of hotel cooling equipment.
12:30 p. m.—Welcome luncheon, Norville Hawkins, speaker.
2:30 p. m.—Trip to Ford, Plymouth, or Kelvinator plant.
6:30 p. m.—Dinner and "Refrigeration Fiesta," ELECTRIC REFRIGERATION NEWS as host.

Thursday, May 23

10:00 a. m.—Second session.
Topic: Commercial machinery.
Chairman: George B. Bright, past president, A.S.R.E.
"Refrigerated Display Windows," H. C. McPherson, Kroger Grocery Co., Cincinnati.
"New Investigation of Absorption Refrigeration," B. H. Jennings, Mechanical Engineering Department, Lehigh University, Bethlehem, Pa.
"Motor Truck Refrigeration and Fuel," Guy L. Tinkham, McCord Radiator & Mfg. Co., Detroit.
10:00 a. m.—Ladies trip to Art Museum.
1:00 p. m.—Council luncheon.
2:30 p. m.—Leave for Greenfield Village.
6:30 p. m.—Dinner at Dearborn Inn. W. B. Stout, president of the Society of Automotive Engineers, speaker.

Friday, May 24

10:00 a. m.—Third session.
Topic: Progress in standards.
Chairman: S. C. Bloom, vice president, A.S.R.E.
"Industrial Machine Standards," A. B. Stickney, Chicago.
"Testing the Capacity of Expansion Valves," D. D. Wile, Detroit Lubricator Co., Detroit.
Afternoon: Golf tournament.

Dust Storms Boost Sale of G-E Air Conditioners

NEW YORK CITY—Recent dust storms in the southwest part of the United States have furnished a new sales argument to dealers of air-conditioning equipment, according to conclusions drawn from a survey conducted by the General Electric Air Conditioning Institute among G-E dealers in the areas affected by the storms.

An increase in public interest in air-conditioning equipment as a means of keeping dust from entering homes and damaging furnishings rather than for the comfort of controlled temperature and humidity, was noted.

Electric Household Appliances, Inc., Dallas, reported that several inquiries resulted directly from the storms. One business man who had a dustproof conditioning system in his Dallas home, ordered equipment to be sent to one of his ice plants in Kansas, which had to shut down when dust stopped the operation of the gas engine.

B. K. Sweeney, Inc., Denver, reported one sale as a direct result of the storm, to an Albuquerque, N. M., resident who wanted clean air rather than cooling.

Albert Ahrens Co., Oklahoma City, has installed a $2,900 system in the home of a bank executive, to protect his furnishings from dust. The company has also been receiving requests for estimates from state banks and owners of residences.

The concensus of opinion of the dealers reporting to the institute is that the dust storms have furnished an extreme test which air conditioning has met with flying colors; that it has aroused public interest to a new peak; and that the number of prospective customers has increased in large numbers, with a considerable sales increase over the coming months as a logical probability.

From St. Louis, heavily hit by the storms, the Midwest Air Conditioning Corp. writes of glowing enthusiasm on the part of its users who, without a single exception, failed to notice the slightest increase in dust particles in their homes, quoting as typical comments, "Did'nt know the dust was blowing until we wakened in the morning." "Have changed my curtains only once since the installation," and "Housekeeping certainly has been

(*Concluded on Page 13, Column 2*)

Training Course Given On York Products

YCRK, Pa.—Two intensive factory training courses, designed to give distributor's men and field engineers the benefit of factory engineering experience with York's 1935 air-conditioning and commercial equipment, have just been completed by the York Ice Machinery Corp.

The first, held from April 15 to 20, was devoted to application engineering on York's new portable air conditioner, model BA-75, and was attended by 15 men from various distributorships. H. W. Gillis of York's commercial division was in charge, and speakers included French Dennison, A. W. Ruff, and Emil Neubauer of the development department, Frank White, service manager of the commercial division, and others.

Delegates to this school, all distributors' men, were C. D. Forney, Easton, Md.; R. D. Schall, Allentown, Pa.; J. J. Murphy, Baltimore; John Lindermann, Tamanus, Pa.; E. S. Bond, Pottsville, Pa.; A. W. Hartzell, Allentown, Pa.; Edward Blambard, Pittsburgh; F. P. Foley and Alfred Arater, New York City; C. R. Heidelbaugh, York, Pa.; P. H. Esterly, Reading, Pa.; C. E. Krichten, Baltimore; A. J. Spicer, Cincinnati; E. G. Carroll, Washington, D. C.; and A. J. Fleischmann, Baltimore.

The second school, held April 22 to 27, was attended by commercial service engineers from York branches,

(*Concluded on Page 13, Column 2*)

Refrigeration Taxes Up 67% in March

WASHINGTON, D. C.—Producers of mechanical refrigeration paid $495,553 in excise taxes in March compared with $295,307 in taxes paid in March, 1934, a gain of 67 per cent, according to a report by the Bureau of Internal Revenue.

Universal Cooler Moves 45,856 Units in 6 Mo.

$2,203,393 Dollar Volume Is Increase of 314%, McNeal Reports

DETROIT—Universal Cooler Corp. dollar volume of sales for the period from Oct. 1, 1934 (start of the fiscal year) through the month of March, 1935, totaled $2,203,393.85, as compared with a dollar volume of $527,070.39 for the same period of 1934, an increase of 314 per cent, reports Frank S. McNeal, general manager.

Dollar volume for the month of March alone was $593,225.59 against $158,546.59 for March, 1934, an increase of 365 per cent.

Shipments by Universal Cooler Corp. during the first six months of its current fiscal year total 45,856 units, as compared with 6,443 units shipped during the corresponding period of the previous fiscal year, an increase of 712 per cent.

March 1935 shipments were 14,678 units against shipments of 1,750 units in March, 1934.

Porcelain Institute To Meet May 22

CLEVELAND — When members of the Porcelain Enamel Institute attend the organization's annual meeting May 22 in the Statler hotel here they will see an elaborate display of the Institute's advertising and sales promotion campaign and the basis for market and technical research.

Of special interest will be a typical store demonstration exhibit, which consists of a portable furnace placed before an array of such porcelain enameled products as an electric refrigerator, electric range, dishwasher, and kitchenware. The furnace will be in operation, enameling souvenir ash trays for visitors.

The meeting will be an open one, and the Institute is urging the attendance of all allied groups, and of manufacturers and distributors of all porcelain enameled products.

Phil Harrison Co. Moves Offices to East Orange

EAST ORANGE, N. J.—General offices of Philip H. Harrison & Co., General Electric distributor, have been moved to 543 Central Ave., here.

While the executive, accounting, sales promotion, and general sales department offices are now located at this address, the product department is still maintained at 82 Poinier St., Newark, officials of the company report.

The company's East Orange retail branch and kitchen institute have also been moved to the R. H. Muir, Inc., department store at Main and Prospect Sts., East Orange. H. J. Rieckers is regional director of the retail branch, and Mrs. Helene T. Foster heads the kitchen institute.

Offices of the G-E Contracts Corp., in charge of M. D. Murdock, will remain at 41 Central Ave., Newark. A retail showroom will also be maintained at this address by H. A. Brangs, Newark regional director.

True & Blanchard Will Distribute F-M Lines

CHICAGO—True & Blanchard, electrical selling organization, was recently appointed distributor in the Vermont and New Hampshire territories for Fairbanks-Morse Home Appliances, Inc.

The new distributor will handle the complete line of F-M appliances.

Lindburg Sells 700 Units In Month of March

ST. LOUIS—Seven hundred refrigerators were sold in the month of March by the three stores of The Arthur R. Lindburg Co., Westinghouse distributor here.

The Lindburg branch in the Famous-Barr Co. store sold two and a half times as many units in March as in the same month last year. R. J. Winters directs sales for the branch.

G-E Appliance Mart Opens in Ft. Wayne

FORT WAYNE, Ind.—E. A. Barnes, Electric Appliances, Inc., recently opened a new General Electric appliance mart here, which occupies a three-story building.

On the opening day the store had approximately 5,000 visitors. Salesmen secured signed orders for about $3,000 worth of merchandise.

Above the display room is a complete General Electric kitchen and space for twenty or more women, where bridge parties are held on an average of three times a week. Mrs. Simmers, home economist, is in charge of this department.

Three booths are at the rear of the display room for the use of floor salesmen who may need privacy to close a sale. Just off the display floor are two tone-test rooms to bring out to best advantage the quality of General Electric radio reception.

A rheostat room is used by Ruth Regadance, home lighting specialist of the dealer's store.

New Indianapolis Store Opened for G-E

INDIANAPOLIS — Electrical appliances, Inc., General Electric appliance distributor for Indianapolis, has opened a new store on the ground floor of the Insurance Building here. Ralph I. Ginn is manager.

Display includes a fully equipped G-E kitchen. The interior of the store has been equipped with new furniture and fixtures and redecorated in antique white and light green. Eight arch windows have been fitted with Venetian blinds, white rope valances, and drapes. Indirect lighting is used. Decorations were designed by Wilbur Briant Shook, industrial stylist.

Lunchroom Managers & Teachers Enroll in G-E Course

CLEVELAND — Five lunchroom managers and several teachers, in addition to college students, have so far applied for admission to General Electric Co.'s cooperative educational course to be given during the week of June 24.

The course was inaugurated last year, and was taken by 30 girls from Cornell University and from Flora Stone Mather College of Western Reserve University, Cleveland.

A curriculum of laboratory work in the model kitchen of the G-E Institute gave students practical experience in using electrical appliances and the principle underlying modern kitchen planning.

Purpose of the course is to offer home economists an opportunity to study their subject from a commercial viewpoint; to put home economics women, who have had experience, in closer touch with opportunities for employment in the commercial field, and to educate these women to the uses of G-E equipment.

Home Economist Sells 8 Units in 4 Weeks

DANVILLE, Va.—Miss Frances Storey, new Kelvinator home economist for the Smith Motor Co., Inc., here has sold eight refrigerators in four weeks.

During her first week, Miss Storey made 127 home service calls on Kelvinator users, getting 52 prospect names. After her third week she reported three sales made during an open house program which she conducted for three evenings.

Crosley Sales Boom In South Africa

CINCINNATI—Philip M. Cohen, manager, H. Polliack & Co., Ltd., Crosley distributor for the Union of South Africa, with headquarters at Johannesburg and Cape Town, on a recent visit to the Crosley factory here reported that in the first three months of this year his firm sold 3,000 Crosley electric refrigerators.

Speaking of radios, Mr. Cohen said, "At the moment there seems to be a slackening up in radio sales due to a misunderstanding created by the large amount of publicity being given to television in the English papers, which are read almost as widely in South Africa as are the local papers.

"Many people seem to think that practical, commercial television is almost at hand. Of course, those who know the technical, practical, and commercial requirements know that such is not the case. The average person does not know that the range of television is limited to a distance of less than 30 miles from the transmitting station.

"Neither do they seem to appreciate the limitations imposed by the greatly added cost of arranging for television broadcasts, where persons, scenery, and all must be complete as in a moving picture or stage scene."

Frigidaire Exports in 1st Quarter Up 43%

NEW YORK CITY—First quarter shipments of refrigeration and air-conditioning products by Frigidaire, Ltd., Frigidaire export organization, to overseas distributors were 43 per cent over the first quarter in 1934, according to figures released last week by Emmet N. Madden, vice president of Frigidaire, Ltd.

Sales Idea for the Week

By V. E. Vining, Manager of Department Store Sales, Westinghouse Electric & Mfg. Co.

I am a great believer in the so-called "canned selling talk."

I don't believe any man can successfully sell anything until he has his sales story so well arranged and so pat that it flows from his tongue of its own accord, leaving his mind free to study the prospect and figure which point to cover next and determine when to say—"sign here."

I know many people who scoff at that idea, claiming a canned sales talk is always apparent; that you can always detect it; that it lacks the element of spontaneity and sincerity it takes to make a sale.

I wonder.

You and I spend $3 for a seat in a theater. The curtain goes up; the villian walks on the stage—the play goes on. We are hearing a "canned" sales talk. The little girl who dies and goes to heaven is not really dead—she will be back tomorrow night to repeat the performance as advertised.

We sit on the edges of our seats, laugh, cry, give our emotions full sway—all because some actors "speak a piece" which they have committed to memory.

The actors are not making up their lines as they go along—there is nothing extemporaneous, or even spontaneous in word or gesture—we are listening to experts—professionals—selling us the idea of entertainment—and the expert never improvises.

Selling—? Amateur or Professional—Which?

An amateur depends upon his gift of gab—and a fancied ability to meet any situation by improvision. A professional knows it can't be done.

50,000 Women Attend Kelvinator Schools

DETROIT — Cooperative newspaper cooking schools conducted throughout the country as part of the Kelvinator spring home economics program are attracting thousands of housewives, report Kelvinator economists.

Miss Dorothy Covert, Kelvin Kitchen home economist, reports a total attendance of approximately 50,000 persons at the cooperative schools conducted by her for dailies such as the *El Paso Times*, the *Amarillo Herald*, and the Albuquerque Publishing Co. Total attendance per school averaged 9,000.

Miss Alice Cooley, another Kelvin Kitchen staff member, who recently finished conducting a series of five newspaper schools for the Pennsylvania Newspaper Publishers Association, reports a total attendance of about 10,000. Schools were held in towns where population varied between 2,000 and 5,000, and were sponsored by weeklies.

A series of newspaper cooking schools will be conducted this year for a West Virginia chain of newspapers by Miss Betty Garrett, Kelvinator home economist for Williams Distributing Co., Clarksburg, W. Va.

Illinois Leads States In February Sales

The following report of sales by states for February, 1935, was made to the National Electrical Manufacturers Association (Nema) by 14 member companies.

States and Territories	Quantity Household Low Sides
Alabama	1,596
Arizona	365
Arkansas	795
California	7,717
Colorado	960
Connecticut	1,794
Delaware	261
District of Columbia	497
Florida	940
Georgia	1,344
Idaho	513
Illinois	15,162
Indiana	2,776
Iowa	2,463
Kansas	1,671
Kentucky	1,028
Louisiana	1,141
Maine	474
Maryland	1,446
Massachusetts	4,452
Michigan	5,057
Minnesota	2,243
Mississippi	408
Missouri	3,695
Montana	507
Nebraska	1,351
Nevada	130
New Hampshire	346
New Jersey	3,200
New Mexico	217
New York	9,716
North Carolina	1,426
North Dakota	312
Ohio	6,218
Oklahoma	1,715
Oregon	1,140
Pennsylvania	8,953
Rhode Island	558
South Carolina	543
South Dakota	336
Tennessee	1,770
Texas	5,845
Utah	465
Vermont	250
Virginia	1,693
Washington	1,914
West Virginia	1,210
Wisconsin	1,717
Wyoming	259
Total United States	**110,589**
Total Canada	533
Other Foreign (Including U. S. Possessions)	4,950
Total for World	**116,072**

G-E Graduates 120 From 'Little Women' School

RICHMOND, Ind.—Miss Edythe Monroe, home economist for the Municipal Lighting & Power Plant here has awarded 120 diplomas to girls who have attended the General Electric Cooking School for Little Women conducted by the utility.

The course consists of six lessons and is open to girls 10 to 15 years of age.

Advantages and economy of cooking with an electric range, thrift in marketing, use of left-overs through an electric refrigerator, and operation of the G-E dishwasher are covered in the series of lessons.

St. Louis Outlet Orders 50 Carloads of Crosley

CINCINNATI—Ben Cohen, president, Glasco Electric Co., Crosley distributor for St. Louis, placed an order for 50 carloads of Crosley electric refrigerators while on a recent visit to the factory here.

To insure the quiet operation so essential in an electric appliance, rotating parts must be absolutely free from vibration, which means they must be in perfect running or "dynamic" balance, as well as in static balance. In Delco motors, dynamic balance is assured by testing armatures on a special machine. This special machine, developed by Delco engineers after many years of research and experiment, quickly and accurately checks the balance of every Delco motor armature at running speed. As a result, Delco motors run without vibration and without noise—a fact which explains why Delco motors are so widely used on motor driven appliances.

DELCO PRODUCTS CORPORATION, DAYTON, OHIO
Made in Canada by the McKinnon Industries, Ltd., St. Catharines, Ont.

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EAST RUTHERFORD N.J.

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Offers the 1935 Superior

REFRIGERATOR

$129.50

F. O. B. FACTORY

Model R-334—4.32 cubic feet. Ice making capacity 4½ lbs. 63 cubes.

$169.50

F. O. B. FACTORY

Model R-615—5.16 cubic feet. Ice making capacity 6 lbs. 84 cubes.

$199.50

F. O. B. FACTORY

Model R-256—6.15 cubic feet. Ice making capacity 8 lbs. 112 cubes.

A SPECIAL MESSAGE TO REFRIGERATOR DEALERS

DEPENDABILITY. For 33 years the name "Atwater Kent" on a product has been accepted as the "hall-mark" of quality and dependability. This name has become justly famous for excellence of workmanship, rigid standards of inspection, and infinite care in all details of manufacture. This reputation for dependability is the assurance that Atwater Kent Refrigerators meet the same rigid standards of excellence. It is the pledge of real performance . . . a refrigerator that will operate efficiently and economically.

Prices subject to change without notice.

$229.50

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Model R-547—7.13 cubic feet. Ice making capacity 8 lbs. 112 cubes.

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PERSONALITIES

By George F. Taubeneck

Babies, Just Babies

Arrival of a photograph of GIL BAIRD's new offspring (Gil is sales promotion manager for Westinghouse) brings to a head something which has been generating in our minds around here for quite a spell. That is, it does seem that the birth rate must be going up *among people living above the bare margin of subsistence.*

Go ahead and tell us that statistics show that the birth rate is declining. We've heard all that before. But we still say that these statistics are probably misleading when it comes to figuring future markets for electrical appliances, for the great majority of all babies are born to families which are poor prospects for such items as electric refrigerators—because of their low incomes.

"The rich get richer, and the poor get children." That's an old saying which has long been accepted as gospel. But recently, we're inclined to believe, there has come a change. People of means are becoming more interested in children, whereas those living in penury have been forced to put a check on their reproduction of the species (which accounts for the decline in birthrate figures).

It all came about as a result of the depression, probably. People turned—or returned—more and more to their homes for relaxation and social contacts. Family life became important once again. And what's home without a baby?

Maybe our experience is unique, but it does seem that most of the families we know are having babies, and *all* of the people we know are talking about babies. In other words, babies have become fashionable again.

(While we're on the subject, this is as good a time and place as any to note that MRS. SCOTTY HOCK—who was CHRISTINE OTIS when she was the editorial secretary around these diggings—has just become the mother of twin girls, Jean and Joan. Many visitors to this office will recall red-headed, good-humored Chris, who made friends with almost everybody who came to see us.)

* * *

In Person

Mrs. Gil Baird, with the newcomer in the Baird family. P. S. It's a girl.

Call Me 'Daddy'

A recruit in the ranks of proud papas—Gil Baird, Westinghouse sales promotion manager.

Babies in the News

If you seek additional proof of this trend toward more and better babies, take note of some of the biggest news stories of recent times. Undoubtedly the kidnapping of the Lindbergh baby, with the trial of the accused kidnapper which followed later, was the most sensational news story of the last decade.

Number two from the standpoint of interest aroused and columns occupied in the press was the arrival of quintuplets to Mr. and Mrs. DIONNE. Those babies are still news. (And aren't their pictures marvelous?)

The biggest box-office draw in motion pictures today is SHIRLEY TEMPLE.

We could go on and on citing evidence of the public's renewed interest in babies. But you've probably observed phenomena of this sort yourself. Anyway, we do feel that the long-faced statisticians who are predicting contracting markets in the future are just a little bit cock-eyed.

Getting on the bandwagon ourselves, we went out and took some pictures of a prize-winning Detroit baby, little Miss CAROL CRANSTON, the other day. These photos are published herewith, along with GIL BAIRD's picture of his newcomer with her mother. Hope you like 'em.

* * *

Mercurial Remarks

Do you read *The American Mercury?* We don't either. Used to, by golly ,when we were much younger and thought that reading the "Merc" made us appear intellectual, or something. But after learning that we could no longer fool the public with any claims to being even an associate member of the intelligentsia, we gave up the "Merc" for magazines which were far more interesting and pertinent.

So it is that we didn't see Robert Littell's article, "The Price of Comfort," in the April issue of *The American Mercury.* Some of the alert boys over in Nela Park (General Electric stamping grounds) did, however, and called our attention to it.

Anyway, your more literary type of prospects may be reading it, so maybe you should know about it, and have your rebuttal prepared in advance. Here's a quotation:

"The conception of the iceless icebox was, I admit, heroic, and one of the undeniable milestones on man's valiant path to salvation.

"But it was some years after salesmen had caused us to succumb, that the howls of the ultimate consumers squeezed, from engineers who apparently had never used ice in any form themselves, a rubber tray which enabled one to get the cubes out after they had been frozen in, and even now the tray itself has an obstinate habit of refusing to come out of its niche just as five friends have dropped in for a drink.

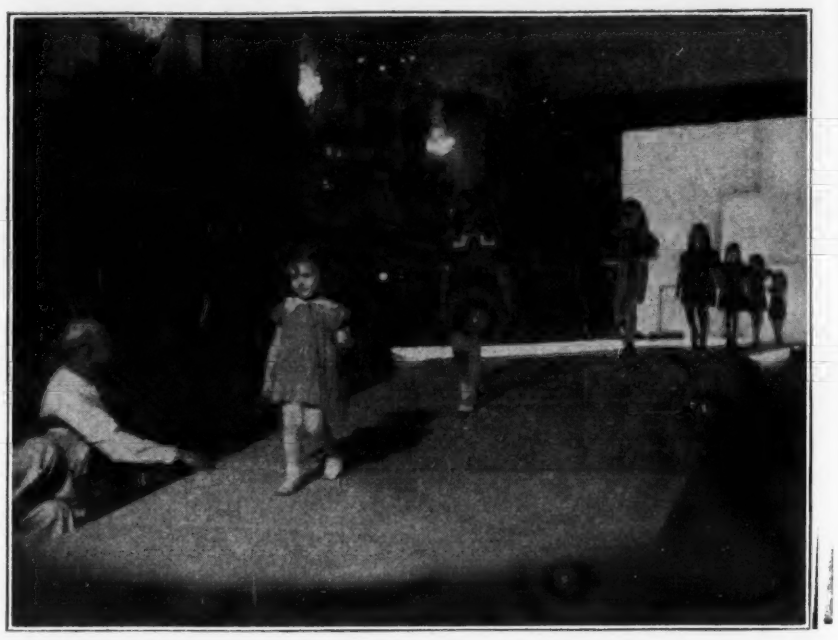
"If on the whole, with these minor crotches, the frosty household pet behaves pretty well, its general health is delicate.

"It has moments when it seems to be having nightmares of the World War, and erupts, and fills the kitchen with a gas attack of ammonia fumes.

"At other times it pretends it is competing with the ice age. Later, it whirs mysteriously and stops altogether. Eventually a service man arrives, finds the problem is too much for him, and calls in the second assistant engineer specializing in 31-b magneto brushes, all resulting in a bill for forty or fifty dollars.

"In the good old primitive days, when we needed ice we went out and bought some."

Parade of Prospects—for 1955



Here's something to look forward to! Potential customers of the 1955's step out of the background of the depression, into a limelight of renewed prominence. Babies are becoming fashionable again—these youngsters were snapped by the candid camera at a recent style show in Chicago.

Lucky Phil

PHIL HARRISON, G-E distributor in Newark, N. J., writes that burglars give him a big laugh. At least, the set who walked into his suite of offices at 41 Central Ave., Newark, recently, overturned a safe, scattered papers on the floor, but obtained nothing of value.

"Looks as if the personality tax appraisers made a complete survey," he writes. From the yeggs' standpoint it turned out to be a comedy of errors.

"They certainly began at the wrong end of the building. After struggling to open the safe, they only succeeded in ripping off the dials. When they reached the private office, they forced a small strongbox, and there before them, the first paper they saw, was the combination of the safe.

"After going to the trouble of forcing open many desks and filing cabinets, they came to a small wall cabinet which contained labeled keys for everything in the place.

"They must have picked Friday night because they figured we paid our employees on Saturday morning. They guessed wrong."

* * *

Commercial Refrigeration Sales Yarns

Last week we ran on this page a few little stories about the experiences of Carrier dealers in selling air-conditioning and commercial refrigeration equipment last year.

There wasn't room to publish all the stories we picked up on our last visit to Carrier headquarters in Newark in that issue. So here are two more. They are a little old to be classified as news, but maybe you'll be interested, anyway. More next week.

What is believed to be the only installation of commercial refrigeration showing the complete line of Carrier-Brunswick units all on one job is the George W. Loft Market, 200 Main St., New Rochelle. It was sold by Specialty Service Corp. of New Rochelle.

Seven Carrier machines are used, ranging from the 51-13 WM to the 54-30. These units serve seven walk-in boxes, six of which have 400 series cold diffusers, and 12 display cases.

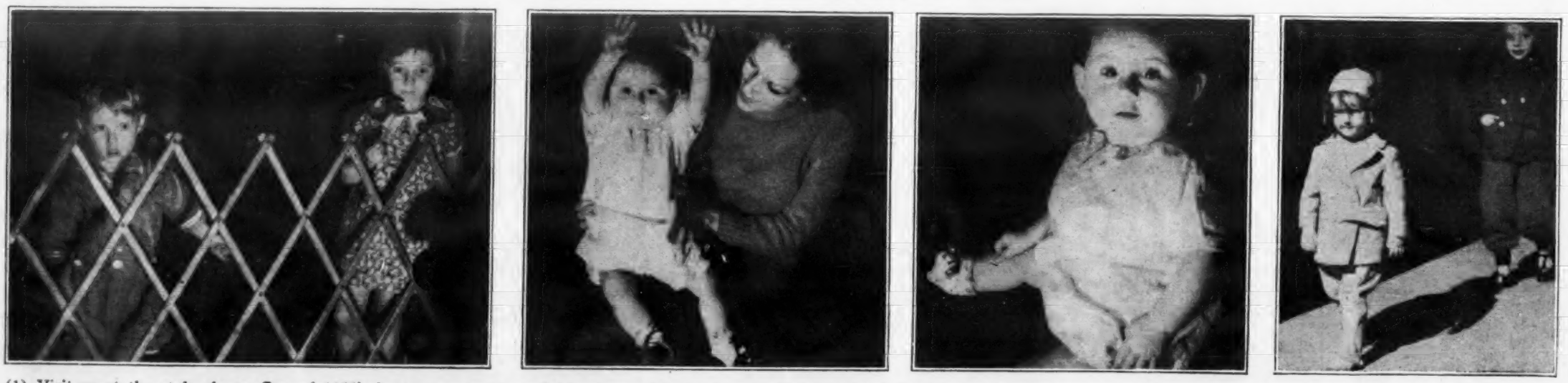
Carrier cold diffusers installed in an Amherst, Mass., cold storage plant keep apples at an even temperature during the winter, and dancers cool during the summer.

Officials of the storage plant, which has a capacity of 50,000 bushels of apples, found a happy solution to the problem of how to make square feet pay their way in the months when apples are not stored, from May to September. Using the cooling equipment as a feature, they decided to run a series of summer dances.

These dances are advertised as being held at the "Amherst Refrigerated Ballroom of the Amherst Apple Cold Storage Co." And "refrigerated" seems quite the word, for the engineer in the plant claims he runs the temperature at "about 63°."

Here Is One Reason Why We Aren't Worried About the Refrigeration Market 20 Years Hence

Baby Carol Cranston of Detroit doesn't worry about whether or not she's an object of renewed interest to statisticians—as long as she gets her quota of attention at home. (1) "Well, well—a visitor, eh?" (2) "What's that, Mother?" (3) "Pose pretty? Here you are, mister." (4) "While we're chewing things over, I want to say that the News is the best newspaper I ever nibbled." (5) "Snap this if you want to—I'm getting out of here."



(1) Visitors at the style show. One of 1955's hottest prospects and his sister pick a winner. (2) "Heil!" shouts young Miss Cranston in baby language—with a double salute. (3) "You'd better get this one quick—I won't be sitting still very long." (4) Winter fashions for children.

Chil-Chest, Cooled By Ice Cubes, Used For Extra Storage

BROOKLYN—Chil-Chest, manufactured by Chil-Chest Sales Corp. here, is a miniature refrigerator in appearance and construction which utilizes surplus ice cubes from an electric refrigerator as a means of keeping the food compartment cold.

Ice trays from the refrigerator may be placed in the compartment provided for them. Trays should be changed twice a day. Cooling is obtained for fruits, vegetables, and other foods requiring a moist cold rather than a dry cold.

The flat model, 17½x21¼x25¼ in., fits on top of a refrigerator, under a table, or in any small space. The upright model is 24¼x18¾x19¾ in. Legs, which are optional, are 6-in. high, to allow for cleaning below. Either model lists for $22.50. Legs for upright size are $2.50 extra. Either size in colors lists for $3.75 extra. Both models are 2 cu. ft. in size.

A few dealers in the vicinity of Brooklyn are considering the use of the Chil-Chest to help sales of refrigerators, reports Julien Loef, president of the Chil-Chest organization.

For instance, Mr. Loef points out, when "a prospect needs a larger refrigerator but hasn't the space or cannot afford it, he (the dealer) can sell the Chil-Chest along with it for a few dollars more, or possibly, if he wants to absorb some part of the cost, give it away as a premium to help sales."

G-E Conditions Air & Equips Kitchen in Model Home

GREENWICH, Conn.—Latest expression of the Regency style architectural revival movement is the house which *Delineator* magazine has erected on the banks of a little river near here, the kitchen of which is equipped with the newest General Electric refrigerator and range.

The furnace room is equipped with a G-E oil furnace which purifies, circulates, and heats the air, and supplies hot water for the house.

The fuel cost for heat, air conditioning, and hot water, *Delineator* estimates, runs less than $90 a year. Snow on the flat roof of the house during the winter served to keep the house warmer and reduced oil consumption in the furnace by 25 per cent.

The model house was completely pre-fabricated in a factory, to the architect's blue print specifications, from a new porous concrete which is said to be stronger and more durable than ordinary masonry materials.

Baseball Schedule Used To Advertise Crosleys

CINCINNATI—Novel piece of promotion material now available to Crosley dealers is a baseball schedule, designed like a slide rule. It shows at a glance the games scheduled for any day of the baseball season.

The games of the National and American leagues are shown on all schedules, while the third league shown is optional. For example, a Texas dealer may prefer a Texas league, and an eastern dealer, a Mid-Atlantic league as the third league on the slide rule.

One side of the schedule carries the line, "Hear the baseball broadcasts with a Crosley radio." The reverse side has a Shelvador advertisement.

Schedules are supplied to dealers at a cost of two cents each, regardless of quantity. An additional charge of 25 cents is made for the dealer's imprint on the entire quantity.

Treasurer of Rempe Fin Coil Co. Dies

CHICAGO—Harold R. Rempe, treasurer of the Rempe Fin Coil Co., died Thursday, April 18. Mr. Rempe had been treasurer of the company for the last 23 years.

He was born in January, 1891, and was educated in public schools, Lewis Institute, and the University of Notre Dame. He is survived by two brothers who were associated with him in business, five children, and seven sisters.

Mr. Rempe was the son of the late George H. Rempe, founder of the Rempe Fin Coil Co.

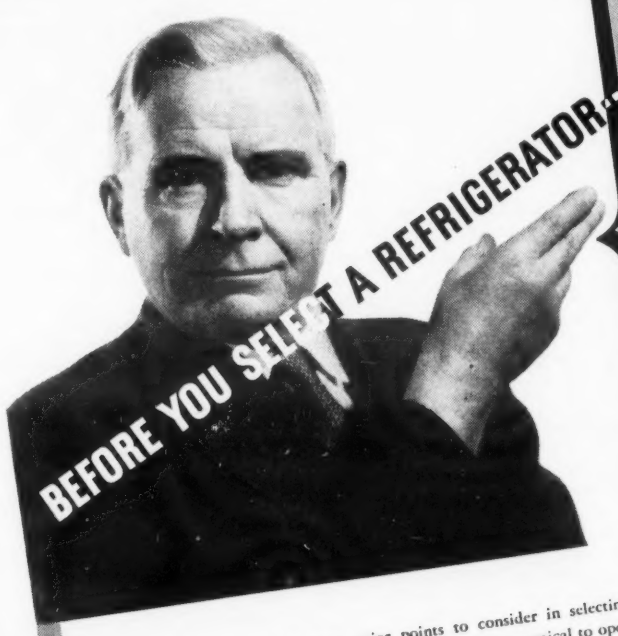
Hall Elected Director Of Westinghouse

EAST PITTSBURGH—John L. Hall, senior member of the law firm Choate, Hall & Stewart of Boston, was elected a director of the Westinghouse Electric & Mfg. Co. at the annual meeting of stockholders of the company held here recently.

Winthrop W. Aldrich, H. B. Rust, and Samuel M. Vauclain were re-elected members of the board of directors at the same meeting.

THESE *four* POINTS

are just as important to YOU...
as they are to HER!



CHICAGO SUNDAY TRIBUNE: MARCH 17, 1935

Check these 4 points
1. economy of operation
2. convenience features
3. mechanical excellence
4. manufacturer's responsibility

and be sure to see the
NORGE ROLLATOR REFRIGERATOR
before you buy

AFTER all, there are only four major points to consider in selecting a refrigerator for your home. If your refrigerator is economical to operate—convenient to use—if the mechanism is dependable and long lived—if it is made by a responsible manufacturer, sold by reputable merchants—you have ample assurance of returns on your investment.

Let's view the Norge Rollator Refrigerator from these four angles:

FIRST, Norge is the economical refrigerator. Owners report that the Norge uses so little current that they scarcely notice it on their light bills. This saving, plus savings in food costs (stopping waste, buying in quantity and thrifty use of left-overs) amounts to as much as $11 a month.

SECOND, Norge is the convenient refrigerator. Shelves are arranged for maximum storage capacity with a handy place for ... action Lazilatch,

gives you more cold for the current used. A Norge Rollator Compressor, on test, has been running the equivalent of 33 years in the average home.

FOURTH, Norge is manufactured by Norge Corporation, a division of Borg-Warner Corporation. Borg-Warner is one of the largest manufacturers of high precision parts for automobiles, with fifteen mammoth factories in Michigan, Illinois, Indiana and New York. Norge is distributed by responsible merchants, retailed by reputable dealers everywhere.

Any Norge dealer will be happy to demonstrate Norge Rollator Refrigeration to you, to help you compare Norge ... other refrigerator. Make *certain* ... the Norge

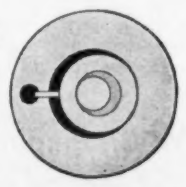
(THIS FULL PAGE ADVERTISEMENT IN COLOR APPEARED IN METROPOLITAN NEWSPAPERS)

This advertisement tells prospective refrigerator buyers what they want to know about selecting a new refrigerator. You, as a merchant, are interested in exactly the same four points.

Convenience and economy are naturally the first points to stress in talking to a prospect. Norge gives you actual, tangible proof of the economy and convenience of Rollator Refrigeration—proof by test, by survey and plenty of owner testimonials.

As to mechanical excellence, the Rollator Compressor, with its slow, easy, *rolling* power, not only provides more refrigeration for the current used, but is almost everlasting. And that means low service expense, greater net profit to you.

THE ROLLATOR COMPRESSOR...
smooth, easy, rolling *power instead of the hurried back-and-forth action of the ordinary refrigerator mechanism. Result—more cold for the current used and a mechanism which actually improves with use. Only Norge has the Rollator.*



As a division of Borg-Warner Corporation, Norge is backed by a 32-million-dollar corporation with fifteen mammoth factories in four states.

Continuous selling support is behind every merchant who sells Norge. Evidence of its effectiveness is in the sales records of Norge dealers everywhere. They are making plenty of money. And they have every reason to believe that the future holds promise of far greater success.

Get the complete Norge story. Write to the Norge distributor in your territory. Or, if you prefer, write direct to the factory.

NORGE DIVISION Borg-Warner Corporation
606-670 East Woodbridge Street, Detroit, Michigan

NORGE
Rollator refrigeration

DOMESTIC AND COMMERCIAL REFRIGERATION • ELECTRIC WASHERS • BROILATOR STOVES • AEROLATOR AIR CONDITIONERS • WHIRLATOR OIL BURNERS • GAS AND ELECTRIC RANGES

Prentis Tells What a Complete Course In Sales Training Should Include

NEW YORK CITY — "There is nothing more trying, nothing more exacting, than the continued effort necessary to train salesmen, but nothing pays bigger dividends. Sales training is a perpetual job. But it carries with it the real gratification of achievement, provided the job is well done," writes H. W. Prentis, Jr., president, Armstrong Cork Co., in "Sales Training—A Perpetual Job," appearing in a recent issue of the *Executives Service Bulletin*.

"Of all factors in modern business, quality of man power is undoubtedly the most important," believes Mr. Prentis. "Yet all too frequently," he says, "it is the most neglected in planning for the future.

Good Salesmen Are Trained

"This," says he, "is perhaps due to the exacting demands upon the time of executives who are called upon daily to make decisions about the immediate problems of finance, policy, equipment, processes, and organization. They may recognize the fact that distribution costs are high and, in the same breath, fail to realize that the real problem revolves around the caliber, character, and ability of their salesmen.

"The fallacy still persists in the minds of many able officers of business enterprises, large and small," he continues, "that 'salesmen are born, not made.' But experience proves in unmistakable fashion that good sales organizations are the result not so much of personal endowment as of carefully planned, painstaking training.

Sales Personality

"It is foolish," says Mr. Prentis, "to discount the value of sales personality. But it is equally unwise to overlook the fact that fundamental changes have taken place in the selling process during the past 20 years, due to a marked growth in the size of industrial units, the broader use of advertising, and the education of the masses in the art of purchasing.

"These changes have developed a need for something more than mere individual salesmanship. Today corporate personality, properly reflected by individuals, is of greatest importance. The spirit of an institution is indefinable yet tangible—something that is apparent to all who come in contact with it.

"In any program of sales training," he continues, "it is essential that these executives inject a generous amount of corporate personality into the men who are to influence the customer to do business with the company. These inoculations cannot be forced or hurried. They are not simply 'shots in the arm,' but a series of treatments with a specific serum that cannot be assimilated in large doses.

"The process of training is of necessity a slow one because it requires the absorption of many facts from a wide variety of sources, many contacts with executives in every department of the business, and many fundamentals of actual business practice as it relates to a particular set of conditions."

Essentials of Program

Mr. Prentis enumerates three essential factors for a successful program of sales training as follows:

(1) The proper selection of good human material upon which to work; (2) a long, well-organized exposure to the light of business knowledge as applied to a particular industry; and (3) a baptism of fire in practical experience.

"A program of this nature, if carried out with skilled guidance at every step and the whole-hearted cooperation of an entire organization is bound to pay for itself in (a) reduced turnover of sales personnel, (b) better morale, especially in branch offices, and (c) unified strategy, which is born of well-directed thinking," says Armstrong Cork's chief executive.

Characteristics of Men

"In the selection of material, we must look for men of character—young men, well educated, with a background of stability, a record of purposefulness, and a healthy degree of ambition. The selection should be made by one who is familiar with the problem and who recognizes what he is seeking when he finds it."

Education is important but a college degree in itself is no assurance of mental training, believes Mr. Prentis. To become a good salesman, he writes, "a young man should have a storehouse of facts about his own life and what is going on about him, he should respect the opinions of other people and realize that no man can ever hope to know everything about anything, and finally he should have a sense of values that permits him to exercise sound judgment in any given set of circumstances."

College Men Best

Mr. Prentis states that the Armstrong company's experience has been that this combination of qualities can more readily be found in college men than in those who have never had the advantages of systematic mental training.

Training reduces turnover, says Mr. Prentis. "In a period of 10 years in which one of our sales organizations was built from scratch (1920-1930), we trained 125 young men who were selected on the general specifications described. Ninety-three of these remained in our employ, 32 left."

"The technique of training will vary in different companies, but in any program it must be emphasized that the entire organization, especially the executives, should take an active part in passing along to the young men in training all that they can contribute to a fuller knowledge and a clearer understanding of the business.

"Card indices, call reports and tabulation of effort will never take the place of a natural enthusiasm which is stimulated by correlated thinking and harmonious participation in one broad institutional purpose," avers Mr. Prentis.

Train with Senior Salesmen

"Following headquarters' training, which incorporates all the essentials of the business, the man who is to sell should have an opportunity to 'try it on the dog' before he is assigned a real sales post. Under the guidance of seasoned men he should be permitted to apply what he has learned about the business, acquire an individual technique that keeps the corporate purpose and personality in mind.

"He will analyze his own mistakes and develop his own strength, until he will arrive, by the trial and error method, at a procedure that is sane, sound but not standardized.

"The work of training salesmen," says Mr. Prentis, "is best carried out by one individual or a small group who will assume this task as a definite responsibility."

Outlined Course of Training

According to Mr. Prentis the program itself should preferably comprise:

1. A definite, systematic plan of training.
2. A syllabus setting forth the history of the company, raw materials and manufacturing processes employed, general policies and sales policies.
3. Complete factory training.
4. Office training, including correspondence.
5. Periodic, frequent quizzes.
6. Contact with all executives as often as feasible.
7. Thorough field training.
8. Sales conventions.
9. Further training through a postgraduate schedule at home office annually.

Training Should Never End

"If a man is to improve as a salesman and put himself in line for executive sales work, his training should never end," states Mr. Prentis. "He should be encouraged to study his job, his company, and himself, and all the facilities for such study should be placed in his hands.

"Too much stress cannot be put upon the value of sales conventions and periodic visits to the home office, for only in this way can the salesman's perspective be renewed, his faith in the business be stimulated, and his enthusiasm for his job be increased through the inspiration he receives."

Fundamentals of Salesmen

Ten fundamentals must be inculcated in every successful salesman in the opinion of Mr. Prentis. These fundamentals are as follows:

1. The resolution, the will power to to make one's self the master of his profession.
2. A capable personality, physically, mentally, and morally.
3. The knowledge of one's goods and house in detail, and the broad economic principles that underline the business.
4. The ability to write and speak cogent, fluent English.
5. The knowledge of advertising as a business force.
6. A knowledge of human nature—the rudiments of psychology.
7. Faith in himself, his colleagues and his goods.
8. A spirit of genuine service.
9. Enthusiasm.
10. Human sympathy.

"The pay check alone never satisfied any man, and we must keep in mind," Mr. Prentis concludes, "whether he is digging a ditch or carrying on an executive job, that we are all men together and that we desire something more out of our jobs than the money; we want to feel that we are really contributing towards the success of the institution of which we are a part."

G & E Furniture Sells Crosleys in 2 Stores

SPRINGFIELD, Ill.—G & E Furniture Co., here is now retailing Crosley electric refrigerators at its two stores at 624 E. Washington St., and 7th & Adams St., reports A. Turner, president and general manager of the Central Auto Equipment Co., Crosley distributor.

Following the company's appointment as a Crosley dealer, J. K. Gingold, general manager, and M. J. Foster, merchandise director, placed an order for a carload of refrigerators.

Westinghouse Showrooms Opened in Tel Aviv

TEL AVIV, Palestine — Westinghouse Electric & Mfg. Co. recently opened new showrooms in this city. W. Diner, formerly with Palestine Electric Co., is in charge of the store.

Systematized Selling Plan Brings Success in Hard-Hit Massachusetts Mill Town

HOLYOKE, Mass.—Despite adverse conditions prevalent in a mill town effected by shut downs, lay offs, and other economic ills, Frank E. Deeley, General Electric appliance dealer has demonstrated that it is possible to lift sales of electrical appliances from a dead slump to a successful basis.

When Mr. Deeley left Beckenridge, Inc., distributor in Springfield, Mass., to accept the dealership in 1932, his predecessor had sold but 28 refrigerators in the first eight months of the year, and had given up his franchise. Faced with this unpromising background, Deeley bent all efforts to make Holyoke G-E appliance minded.

14 Orders on First Day

During the last four months of the year in which he took over the Holyoke territory, Mr. Deeley sold more than the preceding dealer had in eight months. On opening day alone, he took orders for 14 refrigerators. Fifty-one refrigerators were sold during the month of May in the following year.

Mr. Deeley's business had taken such strides in May, 1934 that he moved to a larger, completely air-conditioned store at 267 Maple St. By this time thirteen persons had been added to his original staff of two.

That systematized organization has had a great deal to do with Mr. Deeley's achievements, is evidenced in his salesmanship methods. These include manning his territory with trained salesmen, instigating a consistent policy of house to house canvassing for prospects, and stressing night calls as a prominent part of his salesman's work. He works three or four nights a week himself.

Carries Complete Line

Another factor which has boosted Mr. Deeley's sales, is that he carries a complete line of appliances, including commercial and household refrigeration, air-conditioning equipment, and oil furnaces. The line is displayed in the large air-conditioned salesroom in which the decorative effects make an attractive setting for the line.

Cooking schools conducted in the G-E all electric kitchen in the rear of the showroom, is one promotion feature that has attracted the attention of Holyoke women.

Mr. Deeley opened a store in Northampton, and took over the Amherst and Easthampton territory, on February 1, of this year.

Not a Coin Meter

Martha Fichter of Westinghouse puts a quarter in a "meter bank."

* * *

Westinghouse Offers 'Bank' to Prospects

MANSFIELD — Refrigeration division of Westinghouse Electric & Mfg. Co. has introduced "meter banks" to encourage prospects to save systematically towards the purchase of an electric refrigerator.

This "meter bank" is made of high grade steel and finished in two-tone leatherette with a molded composition base. It registers quarters up to $7.75.

Five uses for the bank, in overcoming the more frequent excuses for delaying the purchase of an electric refrigerator, are suggested for the retail salesman.

These are: to meet the "no money for down payment" excuse; to prove the effectiveness of the "Food Budget Savings Plan"; to back up the "Owner's Club Plan"; to provide an advertising appeal to build store traffic; and to use as a goodwill gift to buyers who pay cash.

It is also recommended that this meter bank be used with prospects who are attracted by FHA advertising, but who do not meet the FHA requirements. This bank will provide them with a means of saving for their down payment and monthly payments.

Kelvinator Declares 12½ Cent Dividend

DETROIT—A dividend of 12½ cents per share, payable to stockholders of record March 5, 1935, has been paid by the board of directors of Kelvinator Corp.

February Electrolux Sales In Quaker City Set Record

PHILADELPHIA — For the first time in the history of the company February sales of Electrolux refrigerators by the Philadelphia Gas Works Co. exceeded those of December, which formerly was the best month for winter sales, reports Frank H. Trembly, Jr., assistant sales manager.

In January, the company exceeded the same period of 1934 by 100 sales. February sales were over those of last February by about 160 units.

BUILD PRESTIGE

—and PROFIT—on

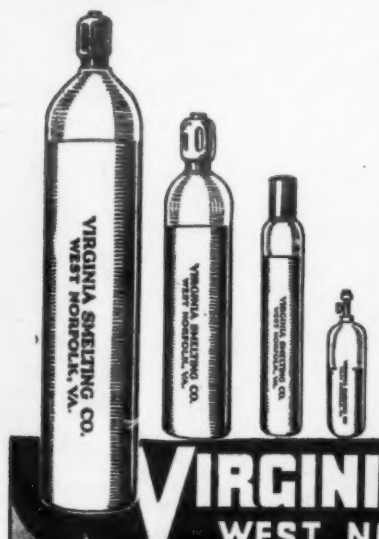
EXTRA DRY ESOTOO

VIRGINIA SMELTING

(Liquid Sulphur Dioxide)

Sold in Massachusetts Only

BOSTON & SPRINGFIELD DESPATCH CO., SPRINGFIELD



Service Men all over this country have preferred it for 16 years—because they know our patented process of production removes all moisture.

You are invited to consult us on any refrigeration problem which may seem puzzling. Suggestions and advice, based upon our long experience in refrigeration, are available to you; without cost or obligation.

And remember that V-METH-L is another excellent refrigerant; particularly adapted to use in ice cream cabinets, refrigerated showcases, etc.

The coupon will bring interesting information.

VIRGINIA SMELTING CO.

WEST NORFOLK, VIRGINIA

MAIL THIS COUPON NOW

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass.

Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.

☐ Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide) ERN-5-1-35
☐ Folder: V-METH-L (Virginia Methyl Chloride)
☐ Folder: Transferring from large to small cylinders
☐ Circular: Physical properties of various refrigerants

Name .....
Street & No. .....
City & State .....

Everybody's Making MONEY with COPELAND!

Rising sales of Copeland dealers prove that this beautiful 1935 line is remarkably easy to sell.

Women, especially, like the sheer beauty of the cabinets, the exquisitely appointed chrome fittings, the conveniently planned shelf arrangements.

Men appreciate the smooth-running quiet unit, Copeland's large ice cube capacity, its low current consumption.

IN THIS compact 1935 Copeland line there is not one single "white elephant" to stay on your floor and gather dust. Copeland makes no play for the "fancy" trade. Just four Copeland models—each skillfully gauged to meet a definite family need. With this live wire Copeland line you can interest 95% of the big-majority market. There's where the big money is! If you are struggling with an unwieldy line, we urge you to investigate the profit and turnover possibilities of Copeland. Just a few exclusive distributor's franchises are open. Write, or wire!

COPELAND REFRIGERATION CORPORATION

Manufacturers of a Complete line of Household and Commercial Refrigeration

Holden Ave. at Lincoln . . . DETROIT, MICH.

Copeland

DEPENDABLE *ELECTRIC* REFRIGERATION

Lewis Outlines Problems Facing Management during Coming Inflation Period

By Howard A. Lewis, Treasurer, Kelvinator Corp.*

I have been handed a large assignment. I am neither a professional economist nor a prophet. As an economist, the subject is worthy of a lifetime of specialization. In terms of prophecy, nothing short of an Old Testament major league performer (none of those minor league prophets should apply), and then the wind should be blowing in the right direction.

If you are always bored, go on home and read what the National Industrial Conference Board has to say on the subject. Also read the remarks of Dr. O. M. W. Sprague, of Harvard, a former consultant of The Bank of England, and more recently the recipient of a verbal blast from our own inimitable General Johnson. Read the remarks of Prof. E. W. Kemmerer of Princeton, the currency fixer for South American republics.

Books on Inflation

Also, read a very interesting booklet, "Inflation and Your Money" by Edward H. Collins, sponsored by a wealthy group of Democrats and Republicans such as Sewell Avery of Chicago, Leonard Ayres of Cleveland and Newton D. Baker of Cleveland.

Don't overlook "An Engineer Looks at Inflation" by Walter S. Landis. Last, but not least, "Inflation Ahead—What To Do About It" by W. M. Kiplinger and Frederick Shelton, published by Simon and Schuster, New York City, price one dollar on the cover.

To save time, I am going to take positions, without supporting proof. Beside the authorities quoted, and others not quoted, I have seen first hand, over the last nine years, the effects of inflation on England, France, Germany, Italy, Belgium, and the Scandinavian countries and last but not least, in Austria and Hungary. During the same period, I have had some contacts with nearly all the currencies of the civilized world, in an endeavor to help translate these currencies into dollars.

We Have Inflation

We in America have inflation. What is inflation. Let me quote Kiplinger's definition: "Inflation consists of the increase of the volume of money (currency or bank credit) beyond the normal needs of business at the particular time, plus active will of business to use the money. We already have the first condition, more money than business is using. We are approaching the second condition—the will to use it."

We are dealing here with a quantative theory of money, so let me say it another way. "The level of prices depends upon the relation which exists between the amount of money in active circulation and the amount of things of all sorts needing to be bought and sold." The words "in active circulation" or the velocity of circulation is the heart of the quantitative theory. At the moment, we need volume of circulation or business volume. Let the reasons be what they may.

Inflationists Want More Money

Now, the inflation boys say "more money is needed," and they make their case on three main premises.

1. Inflation means depreciated currencies, and depreciated currencies are an aid to a country's export business.

2. A decline in prices has made the debt burden unbearable, therefore debtors must be relieved by rising prices.

3. An artificial rise in prices stimulates business recovery.

Thomas Amendment

I have my own point of view about these three points but the purpose of this meeting, as I understand it, is not to debate their merits. We are trying here to deal with a set of existing conditions. Let me list some of the inflationary things that have already been done: Start with the Thomas Amendment to the Agricultural Relief Bill in 1933. The President was authorized to do any or all of four things:

1. To compel the Federal Reserve System to buy three billion dollars of government securities directly from the treasury.

2. Issue up to three billion dollars irredeemable paper money (greenbacks). This has not yet been done.

3. Substitute bi-metallism for the gold standard through the remonetization of silver. (Today one-quarter of the monetary reserves must be silver).

4. Reduce the gold content of the dollar by as much as 50 per cent. It has already been reduced 41 per cent. Gold was worth $20.67 an ounce. Now it is worth $35.00 an ounce. So the U. S. Government gold stock went from $4,323,000,000 to $7,131,000,000, or a gold profit of $2,800,000,000 was created, which can be used by the Treasury Department to either inflate or to control inflation. To date, it is being used to inflate.

A $100,000,000 silver profit by seigniorage has been created, probably more profit yet to come.

Government Debt Increased

The Government's debt has gone from $16,000,000,000 in 1930 to $29,000,000,000, and will be $32,400,000,000 by June, 1936, with an additional contingent public debt of Home Owners Loan Corporation and Federal Farm Mortgage Corporation of $4,000,000,000 with more to come.

Unbalanced Government budgets or Government deficits make for inflation, when financed on bank credit. The Net Demand Deposits of the 6,400 member banks of the Federal Reserve System, which represent 63 per cent of the total banking resources of the country, in April, 1933 were 13 billion dollars. By January, 1935, the Net Demand Deposits were 19 billion dollars, an increase of six billion dollars.

Banking Situation

To give you a comparison, in 1929 the all time high for these same Net Demand Deposits was 20 billion dollars. This figure will be exceeded in 1935, and the experts expect 25 billion dollars Net Demand Deposits for 1937.

Now these Deposits largely represent Government debt financing through bank borrowings, because business, as business, is not yet a borrower. Government deficit financing of this character means Excess Bank Reserves of member banks with the Federal Reserve System.

Excess Bank Reserves

Let me give you the picture here. The Excess Bank Reserves with the Federal Reserve System in 1932 was $234,000,000 less borrowings by banks of $494,000,000, so we had a deficit of Excess Reserves of $260,000,000. In June, 1933, the Excess Reserves were $363,000,000 less borrowings of $184,000,000 or a Net Excess of $179,000,000. In January, 1935, the Excess Reserves were $2,035,000,000 less borrowings by the member banks of only $8,000,000, or we had a Net Excess of Bank Reserves of $2,027,000,000.

Now this came about through gold imports, return of currency from circulation and, as mentioned above, from the Government's bank borrowings to finance government expenditures.

Credit Expansion

As you all know, you theoretically multiply the Excess Reserves by ten, and you have 20 billion dollars, the possible additional bank credit expansion of member banks, or a total, including the January, 1935 actual of 19 billion dollars, of 39 billion dollars, this with the member banks' Reserves as they are.

Here we have the stage set for possible bank deposits of twice the peak of 1929. This is not the end of possible credit expansion. They are planning the rediscounting of long term paper by member banks with the Federal Reserve Bank, which would make possible, capital financing by commercial banks through taking away the liquidity yardstick which we have had with us so positively for the last five years.

Long-Term Financing

As an old time commercial banker said to me the other day, "I have spent all my life trying to make loans that were self-liquidating within a normal year's cycle. I am now busy working on three and five year loans. Though I sit at the same desk, I have left commercial banking. I have gone into intermediate long term financing, and maybe I am in the investment banking business."

Now there are other potential inflationary factors in the offing, such as the possible cash payment to Veterans, and, if you follow from day to day the Washington news, you will see that various individuals and various blocs have their own pet inflationary schemes, which would be added to the large groundwork already laid for a colossal inflationary structure. Other than what the Government is doing with its deficit financing, neither business, the commodity markets, the stock markets, nor have individuals, taken advantage of the possibilities.

As another banker friend of mine said to me over the phone the other day, this inflation situation at the moment reminded him of a young man who was much beloved by a young lady, whose affections he did not reciprocate, but said young lady was actively the aggressor.

Now, said my banker friend, the banks are the young lady and business is the youth. Today, the normal cycle is reversed, the young lady is wooing the young man and he, with true masculine perversity, but biological correctness, is reacting negatively to this freak situation of nature. He is running and hiding, and doing everything but leaving the country. And my friend then said, until business properly woos the banks, because they want credit, we will not have a full use of the inflationary possibilities.

Time will change this picture.

As the economist of another large (*Continued on Page 8, Column 1*)

*Address made before a meeting of the Detroit Chapter, National Association of Cost Accountants, Thursday, April 25.

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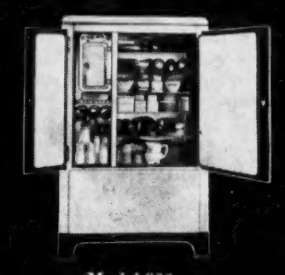

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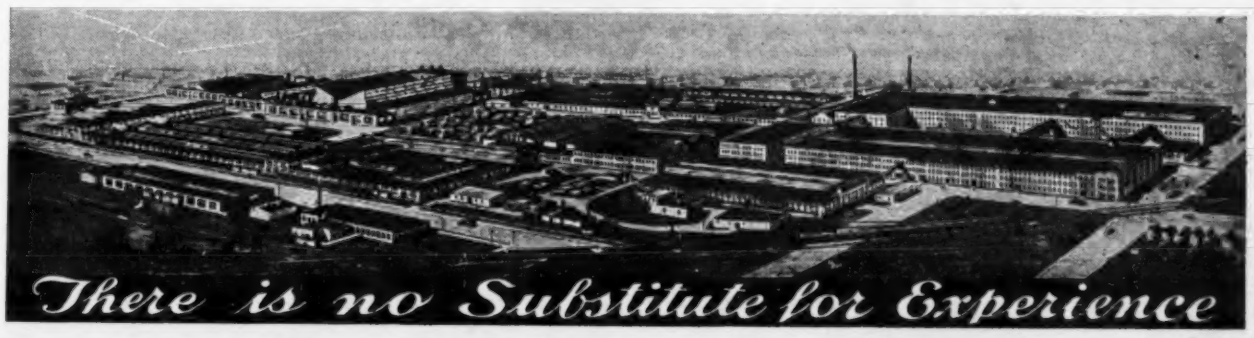


Lewis Explains 7 Problems Which Will Face Management During Inflation

(Continued from Page 7, Column 5)

bank wrote: "The sequence and timing of the inflationary prospects are impossible to predict." At this point, I refuse to be a prophet, and have nothing to say as to when and in what various forms, inflation takes place. We will start on the basis that some time in the future we find ourselves in a period of inflation. Then your business, and ours, and every other business faces the problems of:

1. Labor costs.
2. Material costs or commodity prices.
3. Cost of commercial money
4. Stock prices.
5. Bond prices.
6. Real estate.
7. Sales resistance or general public reaction.

Labor Costs

Labor Costs—Upward. How much? I do not know. What has happened to your business under NRA? How much out of line were you before NRA? Are you unorganized or not? Organized labor is a factor to be reckoned with.

A controlling factor in all Labor Costs is the Cost of Living in a given community, plus the Standard of Living in that community.

Labor in America is no longer a commodity to be bought and sold, with a surplus supply imported yearly from Europe as immigrants. The labor problem is a social question. From now on in America, as in other countries, we must, in some form or other, deal with labor collectively in a bargaining relationship. We must never forget that labor is Buying Power individually, our customers.

If we expect to keep the so called American Standard of Living, we must pay America living wages (sometimes I question this thing called the American Standard of Living as it applies to all of us). As food costs, rent, and the movies, etc., go up in prices, our wage schedule will follow. In some cases wages must precede. It is axiomatic, as money, whether currency or bank credit, depreciates in value, in terms of buying power of things or commodities, as the cost of living index rises, wages must rise. The American Federation of Labor will force some wage increases.

Readjustment of Rates

In many cases, management will face the issue squarely and keep its rates of pay in step with living costs. I look for a readjustment of rates of pay between different classes of work, and organized labor may be a factor in helping to even out these inequalities. We all have our horrible examples where an hour's work in one trade is out of line with the skill required in an hour's work in another occupation. If management will not take the initiative, in arriving at fair rates of remuneration, labor leaders will.

Higher labor rates may be partly counteracted by machines and more skill in management. The price of goods to the consumer will always act, even in an inflation period, as the deterrent to total labor costs. More even employment, more work days a year, a guaranteed yearly wage, may become the rule, not the exception.

Unemployment Insurance

If business cannot find the way to make yearly jobs with a fair yearly wage, unemployment insurance as a tax on business may be the answer. Workers are people, first, last, and all the time, and in a democracy people vote. Wise management will therefore follow the cost of living curve and adjust wages more or less automatically. If not, business will pay indirectly, through some form of taxation. This rule is holding true, even under dictatorships. Wise labor leadership is needed as well as wise management.

Labor costs are eventually going up, maybe 10 per cent, maybe more. As Cost Accountants, you gentlemen can be the arbitrators who deal with the arithmetic of each situation. Class wars, strikes, lockouts, riots, human suffering, mutual unfairness — with facts fairly interpreted, you can protect the interests of all parties, labor, management, the public, and last but not least, the key man in our capitalistic system—the unknown shareholder.

Material Costs & Commodity Prices

Material costs or commodity prices? Upward, yes. How much? Kiplinger says, using 1926 as 100, covering 784 wholesale commodity prices, the low was 60 in February, 1933. In February, 1935, around 79. Some of the wise men expect in 1936 it will be 80 to 82.

A maximum rise of 50 per cent above present levels for general commodity prices seems to be the concensus of opinion for the peak of inflation. Remember our price rises to date have been uneven and spotty.

Corn, Feb. 7, 1933, .250; Feb. 5, 1935, .848. Compare this with coffee, Feb. 7, 1933—.088; Feb. 5, 1935—.092, or less than 5 per cent. Tin for the same dates from .237 to .512; while lead is only .030 to .035.

World commodity stocks are large. For nine of the leading international commodities, they are about twice as large as in 1923, 1924, and 1925. In spite of tariffs, quotas, embargoes, foreign exchange restrictions, etc., the world supply of commodities and the world prices for commodities will play a part in our domestic quotations.

Internally, inflation will work commodity prices upward, but externally, larger stocks and lower production costs abroad (Japan for instance), will make for lower prices.

We are and must continue to be an exporting and importing nation. World factors, therefore, are working to offset commodity inflation. A 50 per cent rise above present levels is optimistic, and even if so, watch out for the "when."

Commercial Money's Cost

Cost of commercial money. Good commercial loans, self-liquidating, payable in six months or under are returning 1 per cent or less. Call money in New York at ¼ of 1 per cent, the lowest for all time. Short term government bills 5/100 of 1 per cent and less.

Commercial money is today a drug on the market, a thing seemingly without value. Reason: excess commercial money to lend, and no borrowers. I am not talking about loans which are made in lieu of owners' capital—those frozen loans that stay put in the business. Neither am I talking about speculative commercial loans, where the hazard of repayment is high. A loan that is an 8 per cent risk will cost 10 per cent or better—maybe 2 per cent for the money and 8 per cent for the risk.

Will these low commercial rates continue indefinitely? My answer is "no," but with the force that exists for credit expansion, as mentioned before, the volume of business that must be done in this country before business really competes for money is tremendous.

Govt. Will Keep Rates Down

The government, with its refinancing program plus the financing of new debt, will work to keep money rates down. The government, through the Treasury Department and the Federal Reserve System, has the power, as never before, to dominate the money market (through possible changing of reserve requirements, maybe), discount rates, open market operations. The government is the biggest business in this country, and its interests are for cheap money. All other good commercial borrowers will get the benefit.

As general business improves, of course, more good borrowers will come into the market and there will be a semblance of competition. The bankers, whose desires are for return, will push for higher rates. Rates will stiffen—they should stiffen, but for some years to come, I see 4 per cent commercial money where we formerly thought 6 per cent.

Stock Prices

Stock prices. Stocks are always a hedge against inflation. Higher selling prices for finished articles, increased volume of sales, always the possibility of increased return for the stockholders in spite of increased cost. Given good management and volume, there is apt to be some profit, if not on the straightaway, at least on the round-abouts.

Dow-Jones index of industrial stocks gives us a low of 64 in 1921; a peak in 1929 of 381. In 1932 the low was 41. Today about 100. Kiplinger says the high of the next four to six years should be 200, perhaps 250.

Effect of Interest Rates

Interest rates will have something to do with stock prices. A stock selling at 100, yielding 4½ per cent, when money is worth 4½ per cent, should, theoretically, sell for 150 when interest rates are 3 per cent.

Market manipulations should not be the factor they were before 1929. The Securities & Exchange Commission will have something to say about that. Inflation history shows that a country can have complete devaluation of its currency (example: Germany) and well-managed companies will still survive.

The world is not coming to an end. People want things. They will continue to buy. Old wants renewed—new wants created. The problem is to pick your industries and the companies that are handling themselves best during an internal inflationary period and an industrial battle royal internationale.

Bond Prices

Bond prices. Here I am stumped. Historically, in a period of inflation, first grade bonds hold their own or recede in price, while second grade bonds rise in price, as the position of each issuing company improves.

Bond income, being fixed, has less buying power when translated into higher priced commodities, like the individual with the fixed salary income who suffers in a period of inflation.

Today the government wants lower interest rates to reduce the carrying charges of its enlarged debt. They talk about 2½ per cent for long time government money. This sets a standard for other high grade bonds. Savings banks and insurance companies are, by law, large first grade bond buyers. As business increases in volume, the investment funds of these institutions expand. They compete for good bonds, forcing prices up and the yield down.

Prices Up, Yields Down

At the present level, first grade credit issuers are calling in their high yield bonds and refunding at lower rates more nearly commensurate with government borrowings. The individual bond buyer sees prices still going up and yields down. The government, the large financial institutions, and the high grade issuers have all conspired against him. If he wants safety, his yield is less, both in rate of return and buying power, and he must also pay a premium in the prices asked.

The individual who desires return must, then, consider second grade bonds or stocks or income producing real estate, or take the position that he will ride the inflation cycle through with high grade bonds, thereby keeping his principal intact, foregoing any income commensurate with increased living costs. If he wants safety of principal, high grade bonds can make a case for themselves.

A note of caution: the high grade bond of today may not be the high grade bond four years hence. Even protecting principal through purchase of high grade bonds will require constant vigilance with shiftings from issue to issue, and a chance for loss at every shift. If you buy second grade bonds, you admittedly take a risk with principal and your return decreases as prices of other things go up. As a potential bond investor, I admit I am stumped.

Real Estate

Real estate. Mother Earth is the beginning and the end. Eat we must. Land that produces food will give a living, as our pioneer ancestors demonstrated. Farm land is moving up in price. In 1933, prices were $17.38 an acre. In 1934, prices were $20 per acre, these figures based on sales of Federal Land Bank farms.

The government's recent policy has helped agriculture. The American farmer took a drubbing from 1920 to 1933. He has been having his innings for the last two years. I believe the government will continue to protect him during this inflation cycle, whether democratic or republican. Politically, the farmer is too strong to be ignored.

Farm Prices Better

Subject to the weather, and bugs, or their equivalent, good farm land should produce more cash per acre. As a hedge against inflation, farm land may be a good buy, but not for everybody. Somebody must work the land. Idle land carries taxes and buildings must be insured and depreciation is always with you, even nature's depreciation of soil errosion, weeds, etc.

With proper farm management, good productive farm land would appear to be a capital protector during the inflation cycle, because farm taxes are being reduced, increased income, and sales taxes, etc., taking the place of increased land taxes. Farm land is obviously not an investment for everyone. It may be a case of marrying into a farming family.

Rents Will Increase

City real estate. Depends on the city. Values are still low, but there is a problem of demand and supply over the next few years. With more rapid transportation, and the tendency for decentralization of industry, suburban real estate and smaller communities offers possibilities, particularly income producing properties. At the moment, it is cheaper to rent than to buy or build.

With inflation taking hold, rents will increase and the purchase or the building of a home may be the average man's best out for inflation insurance, particularly so with improvements in building construction and the added home comforts now available. As an air-conditioning person, I am prejudiced.

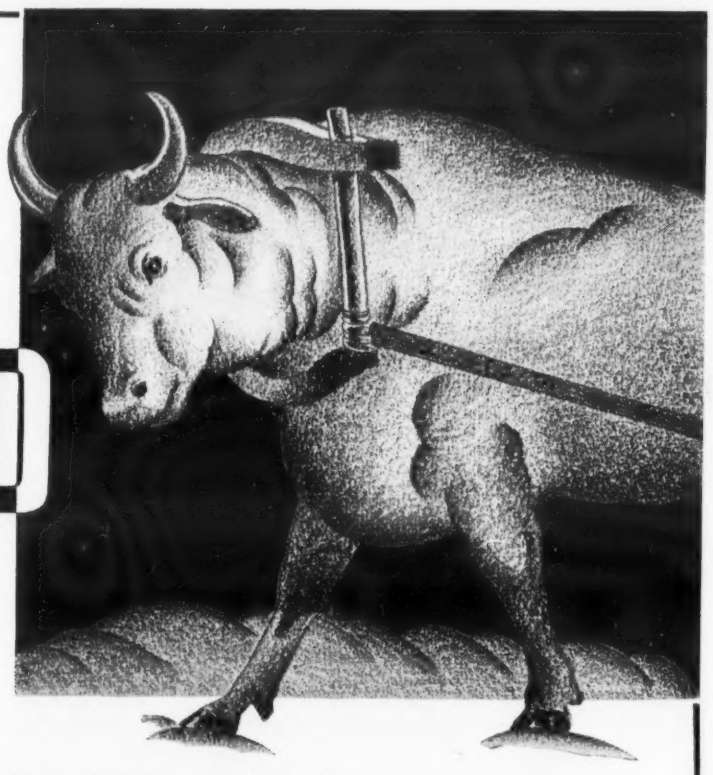
Sales Resistance & Public Reaction

Sales resistance and general public reaction. In Germany, France, Belgium, Austria, etc., where currency inflation ran its course, the public eventually became suspicious of money. Things were more valuable than money. In each country, as the currency depreciated, it became a rush and a stampede to translate money into commodities.

Buy necessities, then anything else. Get rid of money. Prices rose vertically. There was a nightmare of activity. Complete devaluation, as in Germany, and stabilization at a reduced level of 25 per cent, as in France. These were typical of the final results.

Our inflation is not of currency, it

(Concluded on Page 9, Column 1)



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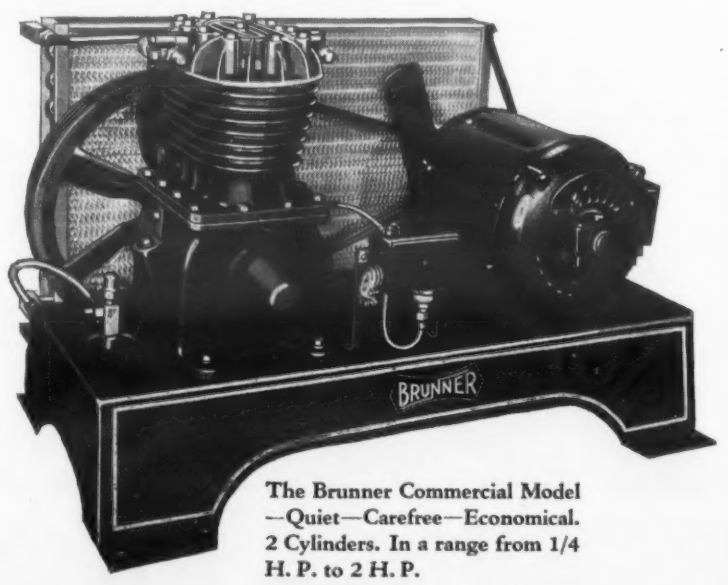

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A NAME BUILT BY 29 YEARS OF SERVICE

Public Buying May Start Expansion of Credit, Lewis Says

(*Concluded from Page 8, Column 5*)

is bank credit. We are in the same condition as England has been since 1931. No public excitement. Prices have gone up internally, with more industrial activity. Everybody's busy. Most people are making more, and things are costing more. Externally, in terms of gold, the English pound has depreciated.

In England, wise people made and are making forward commitments, more time payment sales for example. You pay for the goods in the future, with depreciated money.

The producer takes the chance, because the money he receives in the future will buy less of materials and labor.

The finance houses in between take no chances, as their commodity is money, which is taken in and paid out with no changes in the denominations given to each monetary unit. The finance company's only problem is increased operating costs because of labor, rents, taxes, etc.

Public Awakening

Always there is more public activity during a period of rising prices. As individuals, we all like to take more money in, and hand more money out. We feel more prosperous, we spend more. We are apt to save less. It is easy for the salesman to sell, and easy to collect, until the top of the cycle is reached—then watch out. Have you forgotten 1930, 1931, and 1932?

To date business has not taken advantage of the credit expansion possibilities. Business blames the government, and holds back, and the government builds inflationary machinery that much larger.

Maybe the public will take this situation off dead-center by buying. I wonder if Mr. Average Citizen is not today instinctively inflation conscious? These motor car sales, refrigerator and range sales, etc., that we see—maybe it is salesmanship, and maybe a public awakening, possibly both.

Detroit May Take Lead

If the public will buy, business must start, government policies notwithstanding. We in Detroit may be today in the very center of a great inflationary buying movement, with the public following the government, and business, willy-nilly, bringing up the rear.

History may add another "first" to Detroit's list, a "first" in motor cars, "first" in automatic refrigeration, "first" in bank holidays, first in inflationary movements of the 1935-40 vintage.

Government Builds Brakes

The government has set the stage for our inflation. At the same time, new government brakes have been added. I do not fear a run-away inflation, demagogues nothwithstanding. The 1935 model brakes are four-wheel, hydraulic and, in addition, brand new anchors have been taken abroad which can be thrown to windward.

Time does not permit a detailed explanation. Will the government use the brakes? That is the question. You will answer "yes" or "no," depending on whether you are a Democrat or a Republican, and depending on which party is in power.

Imports and Exports

There is another factor on which I put even greater weight. We are 125,000,000 people, a small part of 2,000,000,000 people. To live, we must today both export and import. Our group is in competition with other groups. Our industrial machine must compete with other industrial machines, Germany, England, Japan, to say nothing of Belgium, France, Italy, Czechoslovakia, and do not forget Russia.

Today Japan has the newest and most efficient producing plant in the world. Japanese are ambitious, they are compact, they believe in themselves, and they work as a unit. To the people who build the best goods at the lowest prices, goes the world market.

In terms of international competition, there is no external value today in a depreciated currency. The other fellow plays the same game. Look at Japan, with its yen always pegged to beat the other fellow; England off gold, and Germany—what have you?

Gold for International Trade

For international commerce, the world will eventually come back to some kind of a gold standard. If our internal price structure is too high, because of inflation, the rest of the world will sell us, and our prices will come down, tariffs notwithstanding, because too much tariff and we will not sell the other fellow our exportable surplus, whether it be cotton, wheat, motor cars, or refrigerators.

Our standard of living is in competition with other standards of living. While other standards may come up, we cannot get too far out of line, or else we move into the cycle of wars and rumors of wars, where philosophies fight philosophies, and individuals mean nothing. There are world-wide limits to our inflation, and as a sensible, intelligent people, we must face these limits. This period of inflation offers new opportunities, both to individuals and to capital.

Now is not the time to take fright; now is the time to take stock. New problems to be solved, and to the men who find the answers go the rewards. I believe in American, and I believe in America's future.

Bruno Appoints 65 F-M Dealers

NEWARK, N. J.—Sixty-five dealers have been appointed to handle Fairbanks-Morse Conservador electric refrigerators in the territory covered by Bruno-New York, Inc., and its subsidiary, Bruno-New Jersey, announces H. A. Glasser, manager of the companies' refrigeration division.

The dealers are: Manhattan—Baitinger Electric Co., 95 Chambers St.; William F. Batterham, 198 Broadway; Ludwig Baumann, 8th Ave. & 35th St., and 144 West 125th St.; Philip R. Besserman, 545 Fifth Ave.

Bronx — Ludwig Baumann, 2918 Third Ave., and A. Silva, 1083 East Tremont Ave.

Westchester—Irving Rubin, Haverstraw.

Brooklyn—Ludwig Bauman, Hoyt & Livingston St.; Bensonhurst Home Appliance Co., Inc., 6701 18th Ave.; Cohn Bros. Furniture Co., 534 Fifth Ave.; Damsky, 546 Stone Ave.; D. D'Antonio, Inc., 202 Fifth Ave.; Leon Epstein, Inc., 333 Sutter Ave.; European Radio Co., Inc., 2078 86th St.; Fifth Avenue Grafanola, 617 Fifth Ave.; H. Friedman, 433 Graham Ave.; Grand Radio Shop, 590-6 Metropolitan Ave.; Home Radio and Refrigerator Co., 400 Court St.; Island Music Shop, 2025 Mermaid Ave.

Le Winters, 18 Graham Ave., 402 Knickerbocker Ave., 56-36 Myrtle Ave., 1564 Pitkin Ave., 319 Broadway; Michaels Bros., Fulton & Bridge Sts., Fifth Ave. & Ninth St., 789 Broadway; Okin Bros., 600 Myrtle Ave.; H. Parnes, 4511 13th Ave.; M. Rosen, 169 Graham Ave.; J. B. Russo & Son, Inc., 87 Havemeyer St.; John A. Schwartz, Inc., 840 Broadway, 1535 Broadway, 340 Livingston St.; Sparks Radio Co., 5415 Fifth Ave.; Stapen's Radio Shop, 1222 Stilwell Ave.; Swire Bros., Inc., 5602 Fifth Ave.

Staten Island — Manhattan Furniture, 128 Richmond Ave., Port Richmond.

Long Island—Michaels Bros., 31-27 Steinway Ave., Astoria; Brody's Music Shop, 1004 Central Ave., Far Rockaway; Michaels Bros., 31 Main St., Flushing; Temple of Music Stores, 43 South Main St., Freeport; Temple of Music Stores, 21 Main St., Hempstead; Ludwig Baumann, Merrick Road & Jamaica Ave., Jamaica; Burden & Co., 162-21 Jamaica Ave., Jamaica; John A. Schwartz, Inc., 166-01 Jamaica Ave., Jamaica; Michaels Bros., 163-40 Jamaica Ave., Jamaica; Temple of Music Stores, 5 Corners, Lynbrook.

New Jersey—Lawler Bros., 920 Broadway, Bayonne; Rogers-Marquiss, 11 So. Essex St., Dover; Morris Lipton, 64 First St., Elizabeth; Wm. Beck & Son, 49 North Dean St., Englewood; Kuss Bros., 273 Main St., Hackensack; Paramount Radio & Music, 624 Washington St., Hoboken; Wallraff Appliance, 1244 Springfield Ave., Irvington; Le Winters, 399 Central Ave., Jersey City; Bronstein, Inc., 225 Wood Ave., Linden; Aladdin Oil Burner Co., 967 Broad St., Newark; Ludwig Baumann, 587 Broad St., Newark; Electrified Refrig. Co., 19 Union St., Newark; Goerke & Sons, 689 Broad St., Newark; Monarch Supply Co., 458 Broad St., Newark.

Sachs Furniture & Radio Co., 328 Passaic St., Passaic; Sachs Furniture & Radio Co., 159 Paterson St., Paterson; Hub-Art Hardware Co., Roselle Park; Gilesman Piano Co., 924 Bergenline Ave., Union City.

Dealer Finds Profit in Rural Custom of Bartering

LOCKPORT, N. Y.—"In a small town sales volume is higher if you accept the rural custom of bartering," says F. H. Schaeffer, local Westinghouse dealer and seed merchant.

Mr. Schaeffer will take in almost anything. On one sale he says he accepted five cords of wood. When goods have accumulated, the firm runs a classified advertisement, and profits on the sales.

In a number of cases, says Mr. Schaeffer, articles turned in have been the means of clinching the sale in the face of heavy competition.

McIntire's Will Sell Crosleys in Toledo

TOLEDO—McIntire's, at 1010 Broadway here, has been appointed dealer for Crosley electric refrigerators, reports James E. Aitken, Crosley distributor in Toledo and Detroit.

Seeger

CHICAGO SERVICE

For many years, the Chicago Branch (illustrated above) of the Seeger Refrigerator Company, now located at 835 Washington Blvd., Chicago, Illinois, has solved important refrigeration problems—furnishing correct and highly satisfactory refrigeration.

In cooperation with Dealers and Distributors of Electrical Refrigeration, the Chicago Branch has equipped many beautiful homes, large hotels, restaurants, institutions, colleges, apartment houses, and grocery and meat shops, with the best refrigeration equipment to fit the particular requirements.

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The efficient and experienced Seeger Chicago Branch staff gladly welcomes the planning, or assisting in the solution of any problem in refrigeration.

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Saint Paul, Minnesota

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Special Representatives:

Meyer Smith Co., Buffalo, N.Y. Seeger-Philadelphia, Inc., Philadelphia, Pa.

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Salesmen's Compensation

SALESMEN are without doubt the backbone of any specialty selling business. But how to pay salesmen seems to be a problem which specialty selling organizations have never quite solved. This is particularly true in the electric refrigeration industry, which has experienced a turn-over of salesmen extraordinary even for a specialty appliance business.

The big problem, of course, is that of figuring out a basis of compensation which will give the salesman an incentive to make sales *at a profit* both to himself and to his company. The plan must not only be fair to both parties, but must actually *stimulate* sales.

Salesmen's compensation plans can be separated into the following classifications: (1) Straight salary; (2) straight commission; (3) salary plus commission or bonus; (4) drawing account against commissions and bonus.

Of these the first is used only by department stores, chain stores (like those operated by the mail-order houses), and other very large retail outlets. The second, straight commission, has been the compensation method most extensively utilized by the majority of dealers in the electric refrigeration industry. The third is used by some department stores, and by many factory branches and "master" (distributor-controlled) dealerships. It is to the fourth method, however, that the industry is turning more and more.

During the worst years of the depression, electric refrigeration sales organizations had few worries about salesmen's compensation. Hundreds of thousands of really competent and able men were jobless and footloose, and the retail sales manager had but to insert classified advertisements in the newspapers to get a flock of high-grade candidates for straight-commission jobs.

These men, when selected, worked hard for awhile, sold to friends, relatives and neighbors, and then generally passed out of the picture when the season's selling activity had died down to a point at which they could no longer make a decent living on a straight-commission basis. Next season a new set of salesmen would be trained, and the cycle would be repeated. It was cheaper, dealers and distributors found, to train salesmen than to pay them.

In the last year or so, however, this formula hasn't worked so well. Competent men are no longer walking the streets in great numbers looking for "anything." Moreover, a considerable number of prospective salesmen have tried it once, and won't be sold so easily on giving it another whirl. Too, manufacturers and distributors have become more ambitious in the matter of selling a number of different specialty lines, and now need large, well-trained sales staffs the year 'round. So a new approach to the problem of compensating salesmen is indicated, in order that more and better men may be drawn into specialty selling as a means of livelihood.

Those who have been studying this situation closely will tell you that a good salesmen's compensation plan should provide more than a living wage, should encourage the sale of the most profitable items on the list, should attract and keep high-grade men, should provide incentive for greater volume than normal efforts would obtain, should be easily understood by the salesmen, should offer definite goals and standards of activity measurement, should be flexible in meeting changing conditions, should permit effective control of salesmen, should present inducements for missionary work, and yet should not endanger the profits of the owner or operator. That's a pretty large order.

Most retail sales managers have found that some sort of "hook" is necessary in setting up a commission-and-bonus plan for salesmen, so that men who make their quota may be rewarded commensurately, and those who do not can be penalized. If a salesman is a real producer he should be encouraged with adequate pay and, contrariwise, if he is "deadweight" material, the company should not be asked to support him. Put another way, the financial reward of good salesmen should not be diminished by the keeping of second raters on the payroll.

This "hook" can easily be provided by withholding part of the commission until the end of the month, and then paying it out in the form of a bonus to those who have surpassed quota. For example: Suppose a dealer decides to pay his salesmen 12½ per cent commission on every refrigerator sold. He announces to the salesmen that this commission will be 10 per cent on each box, with a bonus of 2½ per cent (or more) per box at the end of each month to every salesman who makes his quota.

A variation of this commission-and-bonus system withholds the payment of this bonus until winter time, so that good salesmen may be retained on the payroll all year 'round. For instance, during eight months of the year a salesman may accumulate bonus money in a savings account kept for him by his sales manager. Then "when winter comes," say from December to March, this bonus accumulation may be doled out weekly or monthly. If the salesman doesn't stick with the company, he doesn't get this bonus money. Another effective scheme is to pay out an annual bonus just before Christmas to all those who have made their quota for the year, and who are still with the company.

When you get right down to it, almost any compensation plan will work when you have the right kind of men and the right kind of supervision. But in order to *get* the right kind of men, dealers and distributors are beginning to find it more and more necessary to devise some plan of a nature similar to that outlined above. Now that good times are apparently returning, it would well behoove the industry to give considerable thought to ways and means of attracting and holding the kind of men it needs to put its products into the hands of the consuming public.

WHAT OTHERS SAY

TWO years ago the City government of Detroit was bankrupt. It was in default in payments on its debt, and on its payrolls to its employees. It was in course of issuing some $40,000,000 of scrip, of paper promises-to-pay, of printing press substitutes for actual money. It was quite without the actual money.

Today it has retired all that $40,000,000 of scrip with actual cash. It is paying its employees in cash on pay day, punctually. It has refunded its debt, and is paying its bondholders punctually on every interest day. The City government of Detroit is once more wholly solvent.

Two years ago the great banks of Detroit were closed in a crash that shook the nation. At the time of the crash the deposits in the banks of Detroit were approximately $550,000,000. Today the deposits of Detroit have snapped back to almost $500,000,000. They are within 10 per cent of what they were before the crash.

What has made it possible for Detroit to regain solvency and stability in its municipal structure and in its banking structure? Naturally, obviously, the business activity of Detroit, the activity of its motor car manufacturers—and of the manufacturers who sell supplies to its motor car manufacturers.

Are these Detroiters a lot of sweet-singing "cooperationists" who aspire to a painless prosperity through "joint action" under a "pull-together" code from Washington? They overwhelmingly are not.

These Detroiters have made their comeback as individuals, as individualists, as competitors, as ruthless competitors, as just about anything and everything that in modernistic theory they ought not to be.

They have advanced the common good of their city by each firm trying independently to do itself good. Isn't it quaint?—William Hand, Washington writer in May issue of *Red Book*.

LETTERS

Impudent, Insolent

Kinetic Chemicals Inc.
Wilmington, Dela.

Editor:

Let me paraphrase an old adage and tell you that praise from ELECTRIC REFRIGERATION NEWS is praise indeed. I was very much pleased to have you think that my poor (Chinese depreciation) address at the ELECTRIC REFRIGERATION NEWS' Paper Convention merited the flattering introduction you gave me. I realize it was sincere as others were so completely taken apart in your analysis.

I believe that if there were a Harvard Award or Pulitzer Prize for trade papers the NEWS would win the award with monotonous regularity. Never has any trade paper had to fight so hard for recognition as the dominant mouthpiece in an industrial field and never has any paper so completely achieved its purpose.

One of the reasons for your success has been your absolute independence. You have certainly never softened the stroke of the ax nor diverted the path of a falling chip. I have heard you called impudent, insolent, outrageous and scurrilous, but always with reserved respect—and I have never heard you called a liar. I think the very essence therefore of your success is that men who disagree with you, respect you.

The staff of ELECTRIC REFRIGERATION NEWS seems to be getting a lot of pleasure out of editing the paper and a lot of fun out of life. We who read your paper suspend business when it comes into the office and bury our noses in its pages. We read it from cover to cover and then Doug Porch, Tommy Thompson and I discuss the news of the week. It helps us in forecasting sales of our products and gives us a picture of the sales in the many markets.

With felicitations to Mr. Cockrell and your associates, I remain,

W. W. RHODES, Sales Mgr.

Artic Distributors

E. I. du Pont de Nemours & Co., Inc.
Wilmington, Del.

Editor:

For the most of your work that you publish in the REFRIGERATION NEWS, I have nothing but bouquets to hand you, but I must say that for the piece of work you did in the April 17 issue, I must withdraw the accustomed bouquet.

Please turn to page 17, column 1 in your issue of April 17 under the heading:

"Robins Adds 4 Stock Points for Artic; Other Distributors Are Listed"

Under Wilmington, Del., you have G. S. Robins properly listed as distributing refrigerant gases with main offices at St. Louis covering their stock points in the second paragraph, but then in the third paragraph you go on to list the "complete list of stock points of Artic the refrigerant for service work as follows:" and very carefully detail the stock points of the R. & H. Chemicals Department of du Pont on Artic.

There can only be one conclusion from such an article in the minds of the reader and that is that Robins is stocking Artic through all of the distributors mentioned by you, whereas the point should have been brought out and is probably what you had in mind that the R. & H. Chemicals Department stock Artic at the points you mentioned starting with California.

Will you please rectify this "phony" statement as soon as possible.

THOMAS COYLE,
Manager Chlorine Products Sales.

Correcting an Advertisement

Canadian Industries, Ltd.
Box 1260, Montreal, Canada

Editor:

It has recently been brought to our attention that in your Feb. 20 issue our company was shown as Canadian distributors for methyl chloride manufactured by Ansul Chemical Co.

While it is true that we represent the Ansul Chemical Co. on their refrigeration grade of sulphur dioxide, we do not handle methyl chloride for them.

Therefore, it would be appreciated if you would publish a correction of this feature, establishing the fact that we sell methyl chloride in Canada, which methyl chloride is manufactured by E. I. du Pont de Nemours, Roessler & Hasslacher Chemical Division, Wilmington, Dela.

A. H. MARTIN.

"Enclosed you will find 10 cents for which kindly send us a copy of March 20 ELECTRIC REFRIGERATION NEWS. Your magazine certainly brings a lot of information which is very valuable."—Garmire Radio Shop, 2106 S. Calhoun St., Fort Wayne, Ind.

Newcum's Articles

Pullman-Standard Car Mfg. Co.
11001 Cottage Grove Ave
Chicago

Editor

In April 10 issue of ELECTRIC REFRIGERATION NEWS, you started a series of articles under the title of "Service" by K. M. Newcum.

We have a large number of calls from various railroad people who are connected with maintenance of air-conditioned cars, for books or other publications in which they can find air-conditioning information. This series of articles seems to fit the needs of these men better than any books I know of.

For this reason, I am wondering if you can advise us the number of articles there will be to this series, if the complete series of issues of the NEWS will be obtainable, and at what price; or if reprints will be made, or the series later published in book form.

F. L. MURPHY.

Answer: Regarding the series of articles on "Refrigeration and Air-Conditioning Service" by K. M. Newcum, we are planning to reprint all of this material in book form later on.

It will be some time, however, before the series is completed and the book ready for distribution.

We would suggest that you advise the members of your organization to subscribe to ELECTRIC REFRIGERATION NEWS in order to receive this series of articles as published. They will also get the benefit of much other information on the subject of air conditioning which will be of interest and value to them.

Selling the Service Manual

Kaplin's
1467 Main St.
Bridgeport, Conn.

Editor:

Kindly advise if you have the new Master Service Manual ready for delivery, and quote us net price to distributors. We might sell some of these to the service men to whom we sell refrigeration replacement parts.

Advise what this manual covers.

L. W. KAPLIN.

Answer: We have been trying very hard to get the material together for this book but, until recently, we have not been satisfied with the data available.

In the April 10 issue of ELECTRIC REFRIGERATION NEWS you will find the first of a series of articles on service which will later be edited into a complete service manual. At the present rate, it will be several months before we can hope to have this book completed to the point where we will be willing to place it on the market.

We regret this delay but we have not wanted to put out a book until we could be sure that we have something worth while. We have turned down the manuscripts submitted by several authors.

You will be interested to know that we are developing the idea of the "Refrigeration Library" which will consist of the series of books including Vol. I, the REFRIGERATION AND AIR CONDITIONING DIRECTORY, Vol. II, the REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK, and other volumes on the servicing of orphan machines and current models. As soon as we have made a little progress on these books we plan to offer the series to distributors and replacement parts jobbers for local retail sales.

As you have noted in the columns of the ELECTRIC REFRIGERATION NEWS, we have no dealings with traveling subscription solicitors because they are not reliable, but we are entirely agreeable to handling our publications through substantial concerns with an established place of business. We are inclined to believe that the refrigeration distributors and jobbers could take orders for subscriptions and books on a commission basis and make the operation profitable and satisfactory to all concerned.

Popular Subject

Department of Commerce
Bureau of Foreign and
Domestic Commerce
Washington, D. C.

Editor:

The 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY is indeed a very splendid reference and fills a much needed want in our collection of refrigeration material.

I might mention that since the subject of air conditioning has become quite popular, we have been plagued with inquiries, mostly academic, for "complete information."

ANDREW W. CRUSE,
Chief, Electrical Division.

"Enclosed you will find 20 cents for which please send me two copies of the March 20 NEWS. The issue that contains the specifications of 28 household refrigerators. I want to congratulate you on the wonderful magazine you are putting out. Especially this number. It was a brilliant piece of work."—Harry Welsch, Union City P. O., Union City, N. J.

LETTERS

Honest Agents

T. H. Craig & Sons, Distributors
All Magazines—Worthwhile Books
1008 Second St., Lima, Ohio

Editor:

We have your letter of April 16, and thank you for sending ELECTRIC REFRIGERATION NEWS to Mr. Steiner. Have been unable to contact him since he received it, but will be able to see him soon I think.

We note what you say regarding Fake Subscription agents. Our agents all belong in the county or town in which they sell, practically all of them own their own home, and the mayor of each town will vouch for their honesty, by recommending them to any one who will call him.

The magazine game has become the damnedest racket in America, and so many companies gypped their agents, and were gypped by the agent until we can't blame you for your stand, although lots of companies take this stand in order to get the commission away from their agents.

We would like to have the commission you mentioned, but that is up to you, as where we cannot get a decent commission we explain it truthfully to the subscriber and in 8 cases out of 10 are able to place a magazine of that kind with the subscriber. Hope to be able to send you Mr. Steiner's subscription soon.

T. H. CRAIG.

Mail Order Quality

Cardon Refrigeration Service
P. O. Box 407 Westwood, N. J.

Editor:

This is in reference to the published letter of W. B. Butcher of Lima, Ohio, regarding Mail Order Competition. A brief resume of certain clear-cut specifications as printed in the March 20 issue of the NEWS (to which Mr. Butcher should have referred before making his statement) is given in the following:

Cabinets—Mr. Butcher mentions that Sears, Roebuck and Montgomery Ward have their boxes made by smaller inexperienced concerns, and which, he says, are below the value of Frigidaire, Kelvinator, and Norge, etc. What a laugh! Coldspot deluxe finish cabinets are made by Seeger who is one of the oldest makers of cabinets. As for the Ward, its cabinets are made by Seeger and Leonard, the latter also being one of the oldest manufacturers of refrigerators.

Motors—Will Mr. Butcher please take notice of what he calls inexperienced concerns when it comes to motors, because the Coldspot uses either the Delco, G-E, or Emerson motors and the Ward uses the Delco motor. All of which are some of the finest makes of motors.

Controls—The Coldspot control is made by G-E and the Ward controls by Tagliabue, both are recognized makers of good controls.

Units—The Coldspot unit is made by Sunbeam and the Ward's by the Universal Cooler, two experienced companies in their line.

All this puts these two mail order houses in the field of fair competition when it comes to the quality of their electric refrigerators. Boasting statements are the privilege of all salesmen, but if Mr. Butcher and his salesmen use as their sales talk that Sears, Roebuck and Montgomery Ward's electric refrigerators are made by inferior and inexperienced companies, that talk ceases to be a boast and becomes a false statement.

The writer, being an independent service man, does not favor any one make of electric refrigerator, as, in his opinion, there are at least 20 or more excellent ones on the market, each as efficient as the other. To say differently could only be attributed to trade prejudice.

When it comes to replacement charges, it is ridiculous to expect $8.00 to buy an electric refrigerator unit, no matter how poor it is. When a company states a small fixed sum for a certain length of time to replace units, it means that the price is only the cost of the unit itself. This special offer is good for a certain period of time only and is made by several companies to boost the sale of their refrigerators. When a unit has to be replaced the old one is sent to the factory to be repaired and is kept there for further use.

I agree with Mr. Butcher that he and many other dealers have serious competition in the selling of electric refrigerators, but it is fair competition as far as quality of the product is concerned. People who buy the so-called mail order house refrigerators certainly are not suckers, because they get full value for their money. When it comes to honest sales tactics and facilities, each man for himself and may the best one win. Would not Mr. Butcher be telling a different story if he were connected with the companies he so falsely declames? That would be human nature!

This is but one instance in which the excellent data contained in the NEWS has served to rectify, for better or for worse, a layman's belief about electric refrigerators.

HENRY CARDON.

How About Huey?

Jackson Radio Sales
3864 E. Washington St.
Indianapolis

Editor:

You sent copies of NEWS we already had and we discarded the ones you sent us and therefore cannot send them back. If you don't want to send us the copies we want, why don't you quit business. Your office would make a good ballyhoo for Hooverism and Mellonism as that is about all you do anyway.

P. M. JACKSON.

Answer: Sorry we did a poor job of mind-reading. We don't want to quit this business, we *like* it. Can't you recommend our ballyhoo to some better prospects for such service?

Denver Dust

The Gates Rubber Co.
Denver, Colo.

Editor:

Of course you recall the statement of Mark Twain, which he issued to the press after having read an account of his death, in a newspaper. This has become something of a classic among examples of sarcasm, Mark having said: "I have read the recent reports of my death and found them greatly exaggerated," or words to that effect. I feel much the same way after having read Mr. Lee Putney's report of the horrendous dust storms in Denver.

If Mr. Putney intended to be a little facetious, he would have done well to have related to you the two stories which Coloradoans consider the only worth while products of the unusual weather we have experienced.

In the first of these stories, an eastern Colorado dry land farmer reports having seen two prairie dogs about a 100 feet up in the air, digging holes in the dust. The veracity of this farmer has since been questioned, and the report may never be confirmed. Due to its extremely tenuous nature, many residents of this country doubt seriously that a prairie dog could have ascended more than 20 or 25 feet.

Just so that your records of this disaster may be complete, it might be well to inform you that the storm actually reached its height in western Kansas, where the natives became fairly accustomed to the continuous procession of farms migrating through the air. On being struck with a drop of water coming down out of the sky, one of those dry-landers went out like a lamp, and it required two buckets of dust to revive him.

All joking aside, our neighboring state suffered severely from dust storms. Loyal Coloradoans contend that it has been extremely hazy here at times during the past month or six weeks. However, it would be interesting to read Mr. Putney's report of the exceedingly welcome snow storm which we have been enjoying for the past 24 hours.

G. E. HOKE,
Industrial Division.

We Can't Live on Thanks

Bay View Distributors
349 Division Ave., South
Grand Rapids, Mich.

Editor:

We understand that you are publishing a circular or magazine that gives the I.M.E. equivalents of the different refrigerators.

We would very much like to have about three or four copies of this publication. We would appreciate it very much if you could get those to us.

Thanking you in advance for anything you can do, we are

GEO. E. DE KRUIF, Mgr.

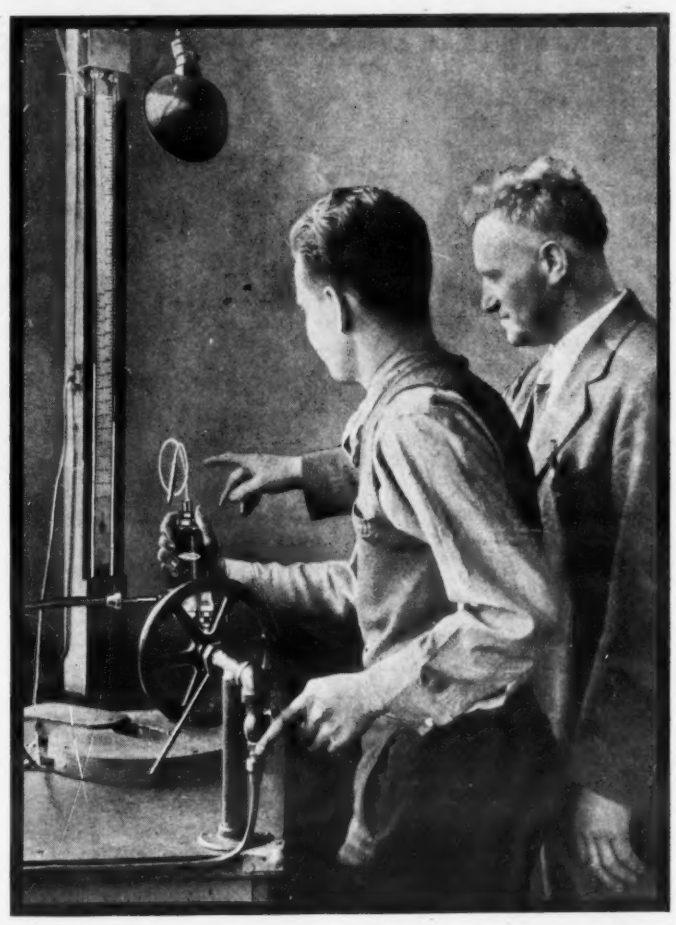
Answer: Sorry, brother, but we can't operate on thanks. Specifications of 290 household electric refrigerators will be delivered to you postpaid for the small price of a dime per copy.

★

"I am on the carpet if one comes back..."

My job is Chief Inspector. I call the Inspection Department, the QUALITY DEPARTMENT, and we make every production man an honorary member! It is my responsibility to see that quality is checked and double checked all along the line from the time raw materials come in until finished products go out to our customers. And believe me, I am on the carpet if one comes back!

K. Henry Morck
Chief Inspector



Every Fedders Model 33 Thermostatic Expansion Valve is inspected for performance over its entire operating range under the personal supervision of K. Henry Morck, Chief Inspector.

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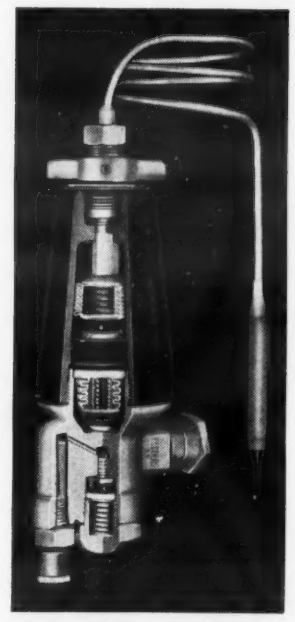

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3. For Single and Multiple Systems
4. The Right Valve for Every Job
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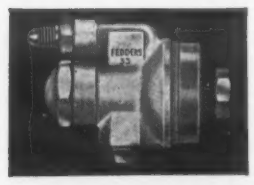
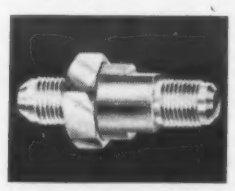


FEDDERS AUTOMATIC EXPANSION VALVE



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Beckett Electric Co.
DENVER, COLO.
Auto Equipment Company
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HOUSTON, TEXAS
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Stone Supply Co.
Refrigerative Supply Inc.
Refrigerating & Power Specialties Co.
SAN FRANCISCO, CALIF.
California Refrigerator Co.
Refrigerating & Power Specialties Co.
SEATTLE, WASH.
Refrigerative Supply Inc.
Refrigerating & Power Specialties Co.
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ADJUSTABLE PAD AND CARRYING HARNESS

The most economical and convenient pad and harness for the delivery and handling of automatic refrigerators.

STYLE L (above) for cabinets with legs.
Order STYLE F for cabinets without legs.

Both pad and harness are adjustable to practically all sizes and makes of automatic refrigerators, necessitating the purchase of one size only. Sturdily constructed for safety, thorough protection and long service. Name of refrigerator attractively lettered on pad without charge.

PAD ..... $9.50 each
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Pipes per complete set ..... $1.75 extra
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ADDITIONAL SPECIFICATIONS OF AIR CONDITIONERS WITH REFRIGERATION

Kelvinator

Kelvinator Corp., Detroit, Mich.

Functions — Self-contained type: cooling, dehumidifying, and cleaning, with heating and humidifying optional on all but model SC-55-DU. Remote floor type: cooling, dehumidifying, and cleaning, with heating and humidifying optional on all but model FT-55-DU. Suspended type: cooling, dehumidifying, and cleaning, with heating and humidifying optional on all but models C-70-DU, C-125-DU, C-200-DU, C-373-DU. Duct type: cooling and dehumidifying.

Cabinet—Self-contained type: lacquer finish. Remote floor type: lacquer finish. Suspended type: finished with prime coat. Duct type: finished with prime coat.

Compressor—Two-cylinder Kelvinator compressor, driven by repulsion-induction type motor. Pressure compressor control. High side safety cut-out.

Blower—Centrifugal type, direct driven for all but duct type, which has belt driven blower. Three speed blower for all but models SC-55-DU, FT-55-DU in self-contained type, remote floor type, and suspended type. Duct type all single speed.

Air Circulation — Self-contained type: air intake in two ends, air discharge in top, multi-vane discharge grille. Remote floor type: air intake in two ends, air discharge in top, multi-vane discharge grille. Suspended type: air intake in top, air discharge in front, multi-vane discharge grille, fresh air intake optional. Duct type: intake in back, discharge in top.

Cooling Systems—Kelvinator copper down-draft cooling coils. Cold water can be used instead of a direct expansion refrigerant in all but models of the self-contained type.

Heating System—Kelvinator copper heating coils. Can be used with hot water if desired.

Type of Humidifier—Spray type.

Air Cleaning Medium—Glass wool filter.

Controls — Self-contained type: models SC-50-DC, SC-75-DC, and SC-100-DC have high side float valve, thermostat, humidistat, liquid line solenoid valve, air by-pass dampers, and water regulating valve. Other models have all these but humidistat and air by-pass dampers. Remote floor type: All models have thermostatic expansion valve and models FT-50-DC, FT-75-DC, and FT-100-DC have air by-pass dampers. Suspended type: all models have thermostatic expansion valve and models CA-275-DC, CA-400-DC, CA-500-DC, and CA-600-DC have air by-pass dampers.

Model No.	Price	Surfaces Cool	Surfaces Sq. Ft. Heat	Refrigeration Capacity* — Dehumidification	Sensible Heat	Total	Net Weight	Compressor Bore & Stroke	Compressor Speed (R.p.m.)	Compressor Motor Hp.	Compressor Refrigerant	Blower Motor Hp.	Blower Speed R.p.m.	Blower Diameter In.	Total C.f.m.	Velocity R.p.m.	Heating Capacity B.t.u.	Humidification Lbs./hr.	Overall Dimensions
Self-Contained																			
SC-55-DU	.....	...	...	1,700	4,800	6,500	580	1½ x 1¾	575	½	Freon	1/40	960	...	240	525	.....	...	49 x 34¼ x 17¼
SC-80-DU	.....	...	...	2,900	6,800	9,700	630	1-11/16 x 2	575	¾	Freon	1/40	1,140	...	275	600	7,400	†	53 x 34¼ x 17¼
SC-110-DU	.....	...	...	4,200	10,000	14,200	750	2¼ x 2½	375	1	Freon	1/20	1,140	...	390	600	19,400	†	55¼ x 42¾ x 19¼
SC-160-DU	.....	...	...	5,400	12,800	18,200	875	2¼ x 2½	490	1½	Freon	1/10	1,140	...	535	735	24,000	†	58 x 42¼ x 19¼
SC-50-DC	.....	...	...	1,400	5,700	7,100	630	1½ x 1¾	575	½	Freon	1/40	1,140	...	275	600	7,400	†	53 x 34¼ x 19¼
SC-75-DC	.....	...	...	1,700	8,300	10,000	750	1-13/16 x 2½	375	¾	Freon	1/20	1,140	...	390	600	19,400	†	55¼ x 42¾ x 19¼
SC-100-DC	.....	...	...	3,700	11,400	15,100	850	2¼ x 2½	375	1	Freon	1/10	1,140	...	535	735	24,000	†	58 x 42¾ x 19¼
Remote Floor Type																			
FT-55-DU	.....	...	...	2,600	5,000	7,600	225	.....	....	...	.....	1/40	960	...	240	525	.....	...	27½ x 14½ x 34¼
FT-80-DU	.....	...	...	3,900	6,900	10,800	280	.....	....	...	.....	1/40	1,140	...	275	600	7,400	†	31¾ x 14½ x 34¼
FT-110-DU	.....	...	...	5,300	9,700	15,000	325	.....	....	...	.....	1/20	1,140	...	390	600	19,400	†	31¾ x 14½ x 42¾
FT-160-DU	.....	...	...	6,900	13,000	19,900	365	.....	....	...	.....	1/10	1,140	...	535	735	24,000	†	34½ x 17 x 42¾
FT-50-DC	.....	...	...	2,400	5,700	8,100	295	.....	....	...	.....	1/40	1,140	...	275	600	7,400	†	31¾ x 14½ x 34¼
FT-75-DC	.....	...	...	3,100	8,200	11,300	350	.....	....	...	.....	1/20	1,140	...	390	600	19,400	†	31¾ x 14½ x 42¾
FT-100-DC	.....	...	...	4,200	10,800	15,000	375	.....	....	...	.....	1/10	1,140	...	535	735	24,000	†	34½ x 17 x 42¾
Suspended Type																			
C-70-DU	.....	...	...	3,300	6,400	9,700	175	.....	....	...	.....	1/40	1,140	...	265	420	.....	...	15⅝ x 30⅝ x 17⅜
C-125-DU	.....	...	...	6,900	11,200	18,100	215	.....	....	...	.....	1/20	1,140	...	390	355	.....	...	19⅝ x 31⅛ x 22
C-200-DU	.....	...	...	12,200	19,600	31,800	375	.....	....	...	.....	1/10	1,140	...	650	445	.....	...	19⅝ x 46¼ x 22
C-375-DU	.....	...	...	25,800	40,600	66,400	450	.....	....	...	.....	¼	1,140	...	1,400	960	.....	...	22⅝ x 46¼ x 33
CA-400-DU	.....	...	...	23,000	36,800	59,800	590	.....	....	...	.....	⅓	1,725	...	1,200	650	110,000	†	26¾ x 46¼ x 52½
CA-550-DU	.....	...	...	28,800	47,200	76,000	620	.....	....	...	.....	½	1,725	...	1,820	800	146,000	†	26¾ x 46¼ x 53¾
CA-600-DU	.....	...	...	35,500	57,000	92,500	820	.....	....	...	.....	½	1,725	...	1,820	800	161,000	†	30¾ x 50¼ x 65¼
CA-900-DU	.....	...	...	43,500	74,900	118,400	835	.....	....	...	.....	½	1,725	...	2,800	865	216,000	†	30¾ x 50¼ x 65¼
CA-275-DC	.....	...	...	17,100	31,700	48,800	610	.....	....	...	.....	⅓	1,725	...	1,200	650	110,000	†	26¾ x 46¼ x 52½
CA-400-DC	.....	...	...	22,400	44,900	67,300	620	.....	....	...	.....	½	1,725	...	1,820	800	146,000	†	26¾ x 46¼ x 53¾
CA-500-DC	.....	...	...	26,500	49,200	75,700	820	.....	....	...	.....	½	1,725	...	1,820	800	161,000	†	30¾ x 50¼ x 65¼
CA-600-DC	.....	...	...	34,700	69,700	104,400	835	.....	....	...	.....	½	1,725	...	2,800	865	216,000	†	30¾ x 50¼ x 65¼
Duct Type																			
DSD-611	.....	.74	...	4,380	8,300	12,680	35	.....	....	...	.....	....	...	...	...	...	.....	...	25¾ x 7 x 10¾
DSD-617	.....	1.19	...	7,050	13,100	20,150	55	.....	....	...	.....	....	...	...	...	...	.....	...	25¾ x 9¾ x 14
DSD-821	.....	1.19	...	10,200	15,300	25,500	65	.....	....	...	.....	....	...	...	...	...	.....	...	25¾ x 9¾ x 14
DSD-624	.....	1.68	...	9,950	18,500	28,450	75	.....	....	...	.....	....	...	...	...	...	.....	...	34¼ x 9¾ x 14
DSD-829	.....	1.68	...	13,900	21,800	35,700	95	.....	....	...	.....	....	...	...	...	...	.....	...	34¼ x 9¾ x 14
DSD-630	.....	2.06	...	12,200	22,700	34,900	90	.....	....	...	.....	....	...	...	...	...	.....	...	26¾ x 16 x 14¾
DSD-836	.....	2.06	...	17,100	26,700	43,800	110	.....	....	...	.....	....	...	...	...	...	.....	...	26¾ x 16 x 14¾
DSD-642	.....	2.92	...	17,200	32,100	49,300	130	.....	....	...	.....	....	...	...	...	...	.....	...	35¼ x 16 x 14¾
DSD-851	.....	2.92	...	24,100	37,900	62,000	160	.....	....	...	.....	....	...	...	...	...	.....	...	35¼ x 16 x 14¾
DSD-652	.....	3.64	...	21,400	40,000	61,400	155	.....	....	...	.....	....	...	...	...	...	.....	...	42¼ x 16 x 14¾
DSD-863	.....	3.64	...	30,000	47,000	77,000	195	.....	....	...	.....	....	...	...	...	...	.....	...	42¼ x 16 x 14¾
DSD-664	.....	4.52	...	26,700	49,800	76,500	200	.....	....	...	.....	....	...	...	...	...	.....	...	35¼ x 24 x 14¾
DSD-879	.....	4.52	...	37,300	58,700	96,000	250	.....	....	...	.....	....	...	...	...	...	.....	...	35¼ x 24 x 14¾
DSD-680	.....	5.63	...	33,300	63,500	96,800	250	.....	....	...	.....	....	...	...	...	...	.....	...	42¼ x 24 x 14¾
DSD-8100	.....	5.63	...	46,700	73,300	120,000	310	.....	....	...	.....	....	...	...	...	...	.....	...	42¼ x 24 x 14¾

*Capacities on all of the models with the suffix "DU" in the model number are based on entering air at 80° F. dry bulb, 50 per cent relative humidity, with an average refrigerant temperature of 40° F. Capacities for all models with the suffix "DC" in the model number are based on entering air at 80° F. dry bulb, 50 per cent relative humidity, and an average refrigerant temperature of 45° F.
†Capacity adjustable—3 to 6 lbs.

American Blower

American Blower Corp., Detroit, Mich.

Functions—Remote floor type: cooling and dehumidifying. Suspended type: cooling, dehumidifying, heating, humidifying, and cleaning. Duct type: cooling, dehumidifying, heating, humidifying, and cleaning.

Cabinet—Remote floor type: walnut finish. Suspended type: Duco finish.

Blower—Remote floor type: two double-inlet Sirocco blowers with General Electric motors. Blowers mounted on motor shaft extension. Suspended type: double-inlet Sirocco blowers belt-driven by G-E motor. Duct type: three Sirocco blowers.

Air Circulation—Remote floor type: air intake in top, air discharge in top. Suspended type: air intake in bottom, air discharge in top. Duct type: air intake in top, air discharge in top. Fresh air intake optional on duct type.

Cooling System—Remote floor type: direct expansion or cold water. Copper cooling coils. Suspended type: direct expansion or cold water. Aerofin copper cooling coils.

Heating System—Remote floor type: copper coils, which can be used with hot water if desired. Suspended type: Aerofin copper heating coils, can be used with hot water.

Humidifier—Remote floor type: self-cleaning impingement type humidifier. Suspended type: spray nozzle humidifier. Duct type: spray nozzle humidifier.

Air Cleaning Medium—Remote floor type: bronze wool filter. Suspended type: throwaway filters. Make: Arco, Dustop, or American.

Controls—Remote floor type: thermostat, liquid line solenoid valve, water regulating valve. Suspended type: thermostat, humidistat, air by-pass dampers.

Model No.	Price	Surfaces Cool	Surfaces Sq. Ft. Heat	Refrigeration Capacity— Dehumidification	Sensible Heat	Total	Net Weight	Compressor Bore & Stroke	Compressor Speed (R.p.m.)	Compressor Motor Hp.	Compressor Refrigerant	Blower Motor Hp.	Blower Speed R.p.m.	Blower Diameter In.	Total C.f.m.	Velocity R.p.m.	Heating Capacity B.t.u.	Humidification Lbs./hr.	Overall Dimensions
Remote Floor Type																			
45	.....	...	...	3,710	7,090	10,800	...	.....	....	...	Freon	1/40	1,150	4½	300	830	.....	...	30 x 34 x 11⅜
60	.....	93	...	7,080	13,820	20,900	...	.....	....	...	Freon	1/20	870	6	600	960	.....	...	34 x 42 x 14⅞
75	.....	129	...	11,200	22,600	33,800	...	.....	....	...	Freon	1/20	700	7½	1,000	1,000	.....	...	38 x 48 x 18⅞
Supsended Type																			
112	.....	...	...	18,000	35,000	53,000	1,670	.....	....	...	Freon	....	...	12	1,700	...	.....	...	88 x 36 x 36
212	.....	...	...	36,000	70,000	106,000	2,300	.....	....	...	Freon	....	...	12	3,400	...	.....	...	88 x 64 x 36
312	.....	...	...	54,000	105,000	159,000	3,060	.....	....	...	Freon	....	...	12	5,100	...	.....	...	88 x 96 x 36
215	.....	...	...	66,400	128,000	194,400	3,820	.....	....	...	Freon	....	...	15	6,200	...	.....	...	88 x 80 x 49
218	.....	...	...	86,500	168,000	254,500	4,890	.....	....	...	Freon	....	...	18	8,100	...	.....	...	97 x 100 x 49
221	.....	...	...	108,000	210,000	318,000	...	.....	....	...	Freon	....	...	21	10,000	...	.....	...	112 x 120 x 49
Duct Type																			
35-DS	.....	...	...	.....	18,100	32,000	...	.....	....	...	Freon	¼	1,100	...	836	...	99,000	...	60½ x 44⅛ x 33⅜
50-DS	.....	...	...	.....	29,700	52,500	...	.....	....	...	Freon	¾	970	...	1,375	...	177,000	...	60½ x 53⅛ x 38⅜
75-DS	.....	...	...	.....	44,000	78,000	...	.....	....	...	Freon	1	995	...	2,010	...	253,000	...	60½ x 74⅜ x 38⅜
90-DS	.....	...	...	.....	53,900	95,000	...	.....	....	...	Freon	1	760	...	2,490	...	313,000	...	60½ x 72⅛ x 52⅛

Strang

Strang Air Conditioning Corp.
Kansas City, Mo.

Functions—Cooling, dehumidifying, humidifying, and cleaning.

Cabinet—Steel cabinet with walnut finish.

Compressor—Models A and C have 2-cylinder compressor, model B has a 4-cylinder compressor. Century or Wagner compressor motor, high side safety cutout.

Air Circulation—Air intake in back, air discharge in top front. Fresh air intake provided.

Cooling System—Direct expansion cooling system, with tinned copper cooling coils.

Model No.	Price	Surfaces Cool	Surfaces Sq. Ft. Heat	Refrigeration Capacity— Dehumidification	Sensible Heat	Total	Net Weight	Compressor Bore & Stroke	Compressor Speed (R.p.m.)	Compressor Motor Hp.	Compressor Refrigerant	Blower Motor Hp.	Blower Speed R.p.m.	Blower Diameter In.	Total C.f.m.	Velocity R.p.m.	Heating Capacity B.t.u.	Humidification Lbs./hr.	Overall Dimensions
Self-Contained Type																			
A	.....	...	...	.....	.....	.....	...	2 x 1½	400	¾	*	...	...	...	300	...	.....	...	42 x 32 x 17
B	.....	...	...	.....	.....	.....	...	1¾ x 1¾	500	1	*	...	...	...	350	...	.....	...	44 x 40 x 19
C	.....	...	...	.....	.....	.....	...	2¼ x 3	400	1½	*	...	...	...	400	...	.....	...	56 x 36 x 28

*Methyl Chloride or Freon.

Betz

Betz Unit Air Cooler Co., Kansas City.

Functions—Cooling, dehumidifying, heating, humidifying, and cleaning.

Air Circulation—Air intake in bottom. Air discharge in top or front. Fresh air intake provided if desired.

Cooling System—Spray type, employing cold water.

Heating System—Own make aluminum or copper heating coils. Can be used with hot water.

Type of humidifier—Spray type.

Air Cleaning Medium—Water spray.

Controls—Liquid line solenoid valve and thermostat standard. Thermostatic expansion valve, humidistat, and water regulating valve as required.

Model No.	Price	Surfaces Cool	Surfaces Sq. Ft. Heat	Dehumidification—Refrigeration Capacity— Sensible Heat	Total	Shipping Weight	Compressor Bore & Stroke	Compressor Speed (R.p.m.)	Compressor Motor Hp.	Compressor Refrigerant	Blower Motor Hp.	Blower Speed R.p.m.	Blower Diameter In.	Total C.f.m.	Velocity R.p.m.	Heating Capacity B.t.u.	Humidification Lbs./hr.	Overall Dimensions
Remote Floor Type and Duct Type																		
Unicools	....	.....	...	.....	.....	210	.....	....	...	Any	...	...	...	400	*	.....	...	7⅛ x 22 x 18 to
*Variable.			110 to 1,500			to 2,200				desired				to 13,000				13 x 48 x 66

AIR CONDITIONING

Milwaukee Air-Cooling Installations

Type of Establishment	Prior to 1933 No.	Prior to 1933 Hp.	During 1933 No.	During 1933 Hp.	During 1934 No.	During 1934 Hp.	Total Thru 1934 No.	Total Thru 1934 Hp.
Theaters	8	2,142	..	..	..	..	8	2,142
Electric Co. Sales Office	1	64	..	..	..	..	1	64
Office Buildings	1	530	..	..	..	..	1	530
Restaurants	1	55	2	28	1	18	4	101
Hotels	1	88	1	66	1	12	3	166
Candy Manufacturers	1	8	..	..	..	..	1	8
Undertaking Parlors	2	19	3	33	..	..	5	52
Offices	1	3	2	4	3	11	6	18
Residences	1	3	..	..	9	22	10	25
Miscellaneous Stores	3	21	1	3	..	..	4	24
Brokers' Rooms	..	..	1	8	..	..	1	8
Industrial Establishments	..	..	1	103	3	8	4	111
Banks	..	..	..	..	1	73	1	73
Clubs	..	..	..	..	1	21	1	21
Totals	**20**	**2,933**	**11**	**245**	**19**	**165**	**50**	**3,343**

19 Air Conditioners Sold in Milwaukee

(*Concluded from Page 1, Column 1*)

made last year were installed in fields practically untouched before 1934. Nine residences, one bank, and one club were air conditioned as compared with one residence prior to 1934, and no banks or clubs before that time.

Other Milwaukee applications of air conditioning during 1934 included one hotel, one restaurant, three offices, and three industrial establishments as compared to one hotel, two restaurants, two offices, and one industrial establishment during 1933.

It is especially interesting to note that the three industrial installations made in 1934 totaled only 8 hp., while the one industrial installation made in 1933 was a 103-hp. job.

Installations of air conditioning in theaters in Milwaukee have been at a standstill. No installations have been made in this field since 1933. Prior to that time eight theaters had been air conditioned, totaling 2,142 hp.

Although the total number of installations made in Milwaukee during 1934, exceeded those of 1933, the average size of units installed was lower, as may be seen from the table below:

	No. of Installations	Total Connected Hp.	Average Hp. Per Installation
During 1934	19	165	8.68
During 1933	11	245	22.27
Before 1933	20	2,933	146.65

IMPERIAL
CHARGING LINE

Perfectly flexible, with brass core and 2 coverings. Length 25¾". Outer covering unaffected by oil or grease. 265-FT. list price, subject to change, **$1.10.**

Write for Catalog No. 77-C

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565 S. Racine Ave., Chicago, Ill.

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FREON UNITS
FOR AIR CONDITIONING

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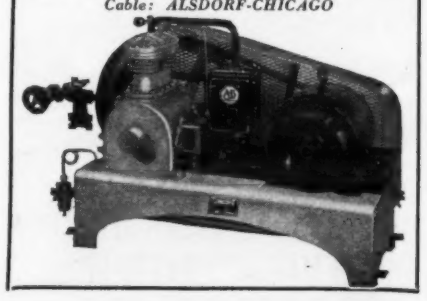


Dust Storms Boost Air Conditioning Sales

(*Concluded from Page 1, Column 4*)

minimized with the installation." Dust cough, prevalent in St. Louis, was entirely absent among this dealer's customers.

The Dallas distributor found deeply interested prospects in a department store, invaded by dust to such a degree that business fell off and valuable merchandise was damaged, and in a hospital, which is considering the installation of conditioning and filtration equipment in a number of rooms, in order to care for asthmatic and other allurgic disorders.

The Air Conditioning Corp. of Kansas City writes that the storms have overcome a handicap encountered in that section for years—that people would not tolerate living in enclosures in which they could not open the windows. The storms have now shown that they can disregard outside elements and maintain delightful air movement and the circulation of properly filtered air.

Lipman Markets 2 New Suspended Units

(*Concluded from Page 1, Column 2*)

directly mounted on the double shaft extensions of the motor.

On model CU-2002, the blower fan has a capacity, at free air delivery, of 2,000 c.f.m., when the unit is fitted with standard supply grilles. Fan motor is ⅓ hp., single phase, 60 cycle, 220 volts, 900 r.p.m., and is of capacitor type. The two supply outlets on this model are fitted with adjustable louvres for controlling the horizontal spread of the air streams. Each outlet is fitted with a Uniflo grille.

Overall dimensions of the unit are 48½ in. wide, 32⅞ in. deep, and 20 in. high.

Blower fan on model CU-2001 has a capacity at .625 in. static pressure, of 2,000 c.f.m., when the unit discharges the air through duct work. Fan motor is ½ hp., 3 phase, 60 cycle, 220 volts, 1,200 r.p.m., a larger motor being supplied because the air must be delivered against pressure in the duct work.

The two supply outlets are fitted with raised flanges arranged for connecting supply ducts to the unit.

Principal use for this type of unit will be found where it is desirable to keep the duct work to a minimum.

The units are intended for use singly, in connection with a model 505-H Lipman refrigerating machine, or in groups of two, in connection with a model 1007-H machine.

Training Course Given On York Products

(*Concluded from Page 1, Column 4*)

and was devoted almost entirely to applications and service work on commercial refrigeration. Frank White, commercial service manager, was in charge of the course.

Speakers included Sam Shipley, assistant chief engineer, French Dennison of the development department, Henry Brysselbout of the commercial engineering division, Scott Nichols of the air-conditioning engineering department, and a number of other York engineers.

Engineers from a number of accessory and supply manufacturers also addressed the sessions. These included D. D. Wile and I. J. Knudson of Detroit Lubricator Co.; George Paine of Allen-Bradley Co.; George Peachim of Century Electric Co.; Roy Plum of Minneapolis-Honeywell Regulator Co.; and R. J. Thompson of Kinetic Chemicals, Inc.

Present at the second school were E. A. Olson, Houston; E. H. Simon, Atlanta; W. R. Jones, St. Louis; R. S. Granfield, Boston; B. P. Martin, Philadelphia; M. A. Ulmes, Brooklyn; J. H. Neilson, Cleveland; and a number of York's factory engineers.

3 Floors of Omaha Hotel Will Be Air Conditioned by G-E

OMAHA—What is said to be the largest air-conditioning installation made in a mid-western hotel will be installed in the Hotel Paxton by Electric Housekeeping, Inc., General Electric distributor here, reports Richard Kitchen, manager for the Kitchen Brothers Hotel Co., operator of the Hotel Paxton.

Three floors of the hotel will be air conditioned, including the coffee shop, barber shop, and basement; main dining room, cocktail lounge, and bar on the main floor; ballroom and eight private dining rooms on the mezzanine floor.

The lobby on the main floor, according to the engineers, will be indirectly conditioned by the hook-up for the rest of that floor.

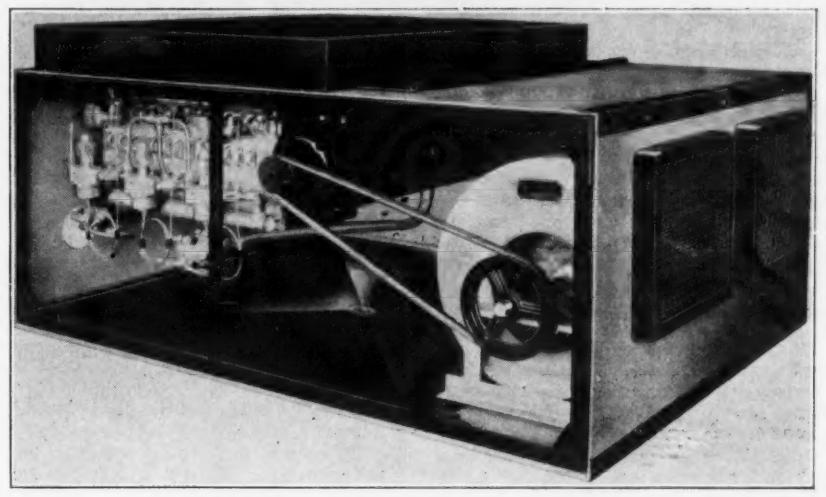
Each room to be serviced will be conditioned by a separate unit, with an individual thermostatically controlled switch. Equipment includes 14 G-E air-conditioning units and necessary compressors. Six 20-hp. condensing units are now being installed in the basement.

Cost of the installation is estimated at $32,659.

Work of installing the six 20-hp. condensing units in the basement is already in progress, and the job will be completed by June 1.

The equipment includes both G-E winter air conditioning and G-E year-'round air-conditioning systems. The winter type heats, humidifies, filters, cleans, and circulates the air. The year-'round type fills the same functions in winter, while in summer it cools, dehumidifies, filters, cleans, and circulates the air.

Kelvinator Suspended-Type Unit



Kelvinator suspended-type air-conditioning unit, 1935 model, featuring Kelvinator's "down draft" cooling coils.

Bryant Heater Booklet Deals with Problems Of Humidity Control

CLEVELAND — Problems of humidity and the means of its control are treated in "The Trend in Summer Air Conditioning," illustrated booklet issued by the Bryant Heater Co.

The booklet describes the Bryant silica gel dehumidifying equipment, which dehumidifies and cools by separate and independent operations, and lists the extent of its application for commercial and private uses.

Hotels, restaurants, clubs, and homes in which Bryant equipment is in use are featured in the illustrations.

Public Service Employes Take Rutgers' Course

NEWARK—Sixteen public service men, enrolled from various offices and departments of the Public Service Corp. of New Jersey, recently completed the Rutgers' course in air conditioning.

Class meetings have been held weekly since last fall in the public service terminal building here, under the direction of H. P. Morehouse.

Up-to-date information with regard to air conditioning has been presented to the students and Mr. Morehouse says that all students will probably complete the course with high grades.

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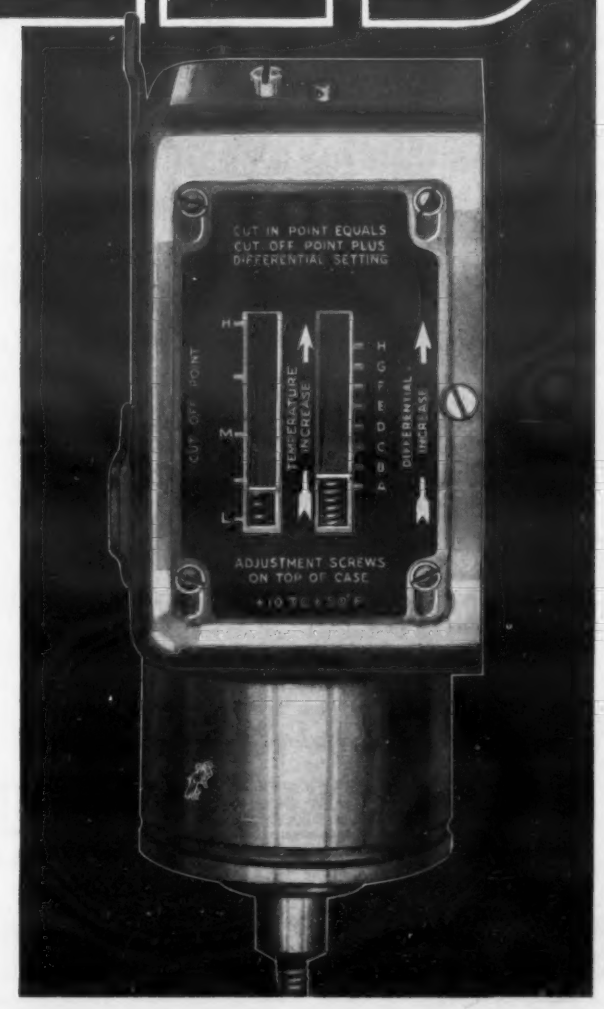
CUT IN POINT EQUALS CUT OFF POINT PLUS DIFFERENTIAL SETTING
CUT OFF POINT
TEMPERATURE INCREASE
DIFFERENTIAL INCREASE
ADJUSTMENT SCREWS ON TOP OF CASE

MINNEAPOLIS HONEYWELL

CONTROL SYSTEMS

Crosley Builds 'Suppressor' Antenna for Powerful Broadcasting Station

CINCINNATI—With construction of Crosley radio station WLW's new "suppressor" antenna virtually complete, the world's most powerful broadcasting station is expected to resume full time operation with 500,000 watts power—following inspection and testing by Federal Communications engineers—within the next week, according to Joseph A. Chambers, Technical Supervisor of the Crosley Radio Corp. stations WLW, WSAI, and W8XAL.

For the past several weeks the Cincinnati super-station has been operating with reduced power after sundown at the request of the FCC following the Canadian Government's complaint of WLW interference with night-time reception of CFRB, Toronto, in the Toronto area.

With its new equipment—the first of its type ever used in commercial broadcasting — WLW's 500,000 watt signal will be suppressed in the Toronto area to the equivalent of a 50,000-watt station, without the same reduction in all other localities in the same direction. It is in this respect, Engineer Chambers states, that the new equipment differs radically from directional antennae now in use.

The new Crosley antenna system is unique in that it "suppresses" WLW's signal in a certain place and not in a certain direction. Because of this, Chambers has coined a new phrase, "suppressor antenna," to differentiate from the usual directional antenna which, to engineers at least, is by no means new in radio. Crosley's WSAI, for example, has been using this directional type antenna for 3 years.

Widespread interest among radio engineers, both in this country and abroad, has been aroused in the successful attempt of Crosley Radio Corp. engineers to design an antenna system (1) to reduce signal strength in a specific spot location without a similar reduction in the intervening territory, and (2) not to jeopardize the station's secondary service in other directions by high angle interfering radiations.

Crosley engineers solved this engineering problem by building equipment to send out a "suppressing" radiation in the direction of Toronto, at an angle of 20 degrees, toward the particular radiation from WLW striking this area. This sharp beam of electrical energy thus strikes the particular 500,000-watt WLW beam headed —so to speak—for Toronto, dissipating its strength sufficiently to reduce it to but 50,000 watts. WLW's signal remains practically unaffected by this suppressing radiation save in the relatively small area surrounding Toronto.

"Ordinarily a station's first concern is its primary area," Chambers said, "but in the case of WLW this circle of some 250 miles around the station contains but a small percentage of our total audience. The principal reason in boosting WLW's power to 500,000 watts was to provide listeners in remote areas with a regular, uninterrupted broadcast service of high quality.

An ordinary directional antenna, however would practically destroy WLW's public value in this respect. For this reason it was necessary for us to develop our suppressor antenna system, causing the least damage to WLW's regular 500 kw. service while reducing the signal where required.

To send out these "suppressing" radiations it was necessary to construct two 325-ft. steel self-supporting vertical radiator type antenna towers. Contrary to the layman's belief, these antennae were built not between WLW's main 831-ft. vertical radiator antenna tower and the area to be effected, but behind the main tower.

These are spaced 702 feet apart and the exact center between them is 1,850 feet from the main tower. The effect of the "suppressor" antenna is controlled by such factors as distance, amount of current in the three antennae, and the phase relationship at which they are excited. A total of 85,000 watts power is fed into the suppressor antenna.

The new Crosley antenna system involved an additional expenditure of more than $30,000.

Mullen Bros., Dubuque, to Handle Crosley Line

STERLING, Ill.—Appointment of the Mullen Brothers Co. of Dubuque as exclusive dealer for Crosley electric refrigerators was announced recently by L. C. Wheeler, vice president of the Hardware Products Co., Crosley distributor in this city.

Mr. Lundin, manager of the Mullen Brothers Co., is a pioneer in the electrical refrigeration field. He attended his first refrigerator school in 1922 and for the past 13 years has been selling electric refrigerators.

McRae Will Distribute Automatic Washers

TROY, N. Y.—H. A. McRae Co. of this city has been named distributor in part of the state of New York for Automatic washers and ironers by the Automatic Washer Co., Newton, Iowa.

Haldeman Finnie Seeks to Have Excise Tax Lifted

Haldeman Finnie, able and astute Nema consultant, was a recent News visitor. (1) "I'm preparing a brief to the government to have the 5 per cent luxury tax on refrigerators lifted." (2) "We're looking for instances to back our contention that refrigerators are an everyday necessity." (3) "It seems to me a Tennessee judge has ruled that refrigerators are among the homestead exemptions in bankruptcy cases. (4) "The FHA allows loans on them—that's a point in our favor."

James & Co. Puts 'Spotlight' on Salesmen In New Program of Contest Activity

ST. LOUIS—"Spot-lighting" of individual salesmen as well as display dealers, district managers, and their groups, is a feature of the new program of contest activity being followed during 1935 by James & Co., distributor for General Electric appliances in St. Louis, says Clay Miller, sales promotion manager.

Each month a picture of the leading display store with its men grouped in front of it is placed in a shadow box called the "spot light." Included are photographs of the leading group and its district manager, the three high salesmen and the three high district managers.

Pictures of the winners of the current month replace those of the previous month which in turn are permanently displayed on the wall in another section.

Trophies awarded each month for sales leadership which are displayed by winners in their stores during the month are:

The President's trophy — reproductions of all the appliances in the line, engraved on silver and mounted on a board—awarded to the leading display store; the Burton trophy for the leading group—a reproduction of the balanced job scales in silver; the Miller trophy for leading salesman—a reproduction of the January Shell poster "Team Work."

A daily point record of the standing of each store and each group is exhibited in the James & Co. auditorium. A daily showing is also made of the records of the three high salesmen and the three high district managers.

In addition, a numeral showing its position in sales efficiency for the previous month is displayed in each store and a similar one is kept in the store's meeting room. A button showing his store's standing is furnished each salesman.

Each month a banquet is given at a leading hotel or club to keep interest in the contest alive.

EARNINGS

Westinghouse

A more than seasonal increase in shipments of electric refrigerators and other household appliances, heavy billings of equipment for railway electrification, and about $900,000 nonrecurring income, brought Westinghouse Electric & Mfg. Co. a net income of $2,326,496 in the first quarter of 1935, compared with a loss of $1,776,152 in the same period last year.

Non-recurring income consisted of arrears of dividends on preferred "A" stock of Radio Corp. of America and profit on the sale of a block of that stock.

A continuance of good business for the second quarter is indicated, reports Chairman A. W. Robertson, but shipments of railway equipment will be substantially reduced in volume after the next few months.

Books for 1935's first quarter were 50 per cent ahead of last year, and with the exception of the second quarter of 1934 were the highest since the second quarter of 1931.

Stewart-Warner

Earnings of the Stewart-Warner Corp. for the first quarter of 1935 were nearly 200 per cent larger than in the initial quarter of 1934, the quarterly statement released last Wednesday shows.

For the three months ended March 31, 1935, consolidated net income, after all charges including depreciation, federal taxes and reserves for year end adjustments, was $496,063, equivalent to 40 cents a share on the 1,246,847 shares of common stock outstanding in the hands of the public. In the three months ended March 31, 1934, consolidated net profits were $167,495, or 13 cents a share on the common stock.

Net sales for the March, 1935, quarter were $5,262,701, as compared with $4,045,721 in the first three months of 1934, a gain of 30 per cent.

Consolidated balance sheet at March 31, 1935, shows approximately $1,000,000 in cash and government securities on hand, and no bank loans. Net working capital at March 31, 1935, showed an increase of $733,673 over December 31, 1934.

Commenting on the results for the quarter, James S. Knowlson, chairman of the board, said:

"Three factors contribute to the substantially improved results for the quarter. First, increased sales; second, the fact that the major lines which have been responsible for substantial losses in the past are making a much better showing; and third, the most important, the continued efforts which have been made by both the sales and the factory organization to increase efficiency and lower costs."

Hare to Direct Buffalo Westinghouse Office

BUFFALO—J. K. B. Hare has been appointed manager of the Buffalo office of the Westinghouse Electric & Mfg. Co. He succeeds H. F. Boe, who is now assistant manager of the eastern district of the company, with headquarters in New York.

Mr. Hare, formerly with Westinghouse Airbrake Co., joined the Westinghouse Electric & Mfg. Co. in 1916. During his years with that organization he has been manager of the Columbus office, and assistant central station manager with headquarters in New York.

Prior to his transfer to this city, Mr. Hare was central station and transportation sales manager of the central sales district, with headquarters in Pittsburgh.

Electromaster Sales Up For First Quarter

DETROIT—Sales of Electromaster, Inc., manufacturer of Waldorf electric ranges and water heaters, for the first quarter of 1935 show an increase of 52 per cent over those made in a corresponding period of 1935, R. B. Marshall, president of the firm, reported at a stockholders meeting held here recently.

Wesco Manager Uses Salesroom on Wheels For Outlying Districts

SAN FRANCISCO — W. I. Powell, manager of the refrigeration department of Wesco-San Francisco is using the "salesroom on wheels" plan to contact both dealers and prospects.

He takes a truck, equipped with a cutaway cabinet and unit, two Westinghouse refrigerators and all of the 1935 sales promotion material, to little towns in and around San Francisco contacting dealers who feel they "can't afford to come 'way into the city" to see the new line.

Mr. Powell plans to arrange for his dealers to use the "salesroom on wheels" as a selling truck to their customers in individual communities.

He expects an increase in business of from 200 to 300 refrigerators per year, from communities that have never been touched by refrigerator activity.

The truck was first put in service in October last year with a line of heating appliances and vacuum cleaners for the Christmas trade. Wesco-San Francisco secured $7,500 worth of plus business within two months.

Rigdon Will Supervise District for Danforth

PITTSBURGH — James G. Rigdon has been appointed district supervisor for the Danforth Refrigeration Co., Westinghouse distributor for Pittsburgh.

Mr. Rigdon was the first salesman in the Danforth organization to use extensively the "Use the User" plan. He has one user who has sold 30 refrigerators for him.

Frank Wolf Opens New G-E Store in Buffalo

BUFFALO—Frank W. Wolf, Inc. recently opened a new store here, which will handle General Electric appliances, John Sorg is manager. Sales supervisor is Joseph O'Connell.

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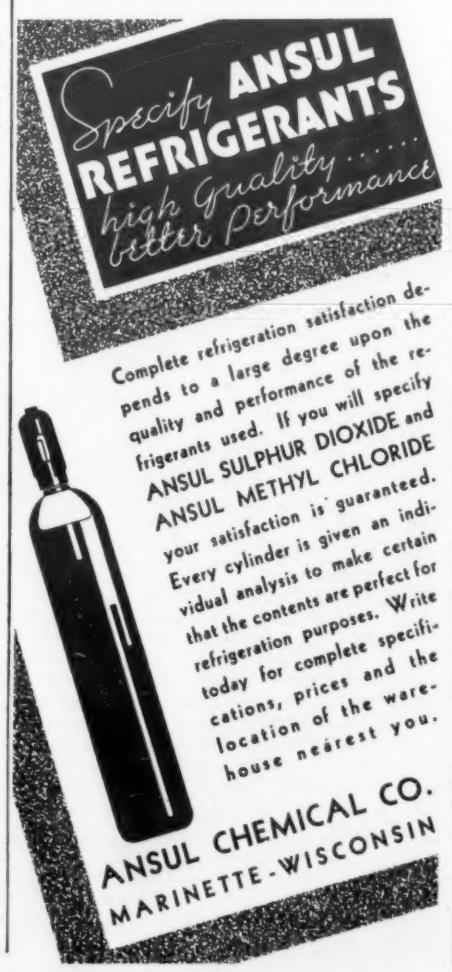
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SERVICE

Functions of the Various Compressor Parts

Editor's Note: Component parts of the compressor of a household refrigeration system are described in the fourth article of the series being written by K. M. Newcum for the use of refrigeration and air-conditioning service and installation men.

Because of the magnitude of the subject, the article has been divided into two sections. Parts which will be covered next week are stuffing box seals and direct connected condensing units.

The first article, which was published in the April 10 issue of the NEWS, dealt with the fundamentals of refrigeration. Inasmuch as refrigeration is really a process of the removal of *heat* from a given space, these "fundamentals" consist mainly of the terms, definitions, and physical laws which are involved when heat is transferred from one substance or space to another location.

In the second article, appearing April 17, the three principal parts of the refrigeration system — cabinet, evaporator, and condensing unit—were described briefly and the operating cycle of a refrigerator was explained in detail. Also published with this article was the refrigerant pressure-temperature chart and an explanation of service gauges.

Properties which are necessary for a good refrigerant were explained in the third article which appeared in the last issue of the NEWS. The article also gave a detailed comparison of the physical properties and characteristics of the following refrigerants: sulphur dioxide, methyl chloride, ethyl chloride, ammonia, and Freon.

By K. M. Newcum

The condensing unit, commonly called the "compressor unit," is the mechanical apparatus for reclaiming the heat laden gases, returning them to their original liquid state so that they may be used over and over again in the process of producing refrigeration.

Condensing Unit

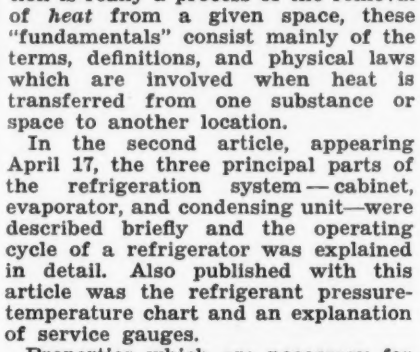

Fig. 6. Typical condensing unit (Universal Cooler).

Condensing units vary in appearance and in other ways but all serve the same purposes. They are all composed of the following five major parts:

Base on to which all the other parts are mounted; the *compressor* which is the pump for compressing the refrigerant vapor; the *condenser* which is the heat dissipating agent; the *liquid receiver* which is the chamber for receiving and storing the liquid refrigerant; the *motor* which is the propelling force to drive the compressor.

There are several other parts which go to make up the condensing unit. All these parts will be covered in the following paragraphs. Typical condensing unit is shown in Fig. 6.

Compressor Body

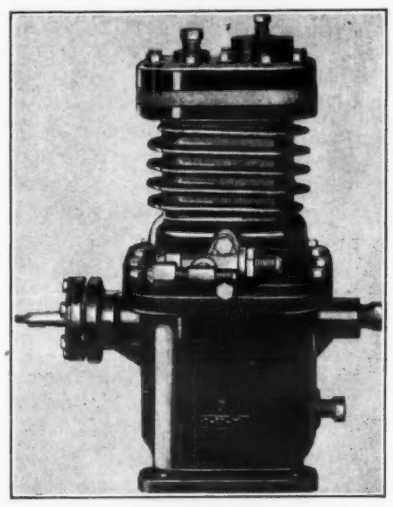

Fig. 7. A Frigidaire compressor body assembly.

47. The Standard Reciprocating Compressor

Many different types and styles of compressors have been designed, built, and put on the market. Realizing the impossibility of describing each and every make, certain makes have been chosen as typical examples of the several designs. The examples cover most all of the different features important to the service man. The standard reciprocating type will be given first consideration.

48. The Compressor Body Assembly

The compressor is all that part of the condensing unit that has to do with pumping the refrigerant vapor. It is sometimes called the compressor body assembly as it consists of several different parts assembled together to make a complete compressor.

Fig. 7 illustrates one of the several models of compressor bodies built by Frigidaire. Domestic and small commercial compressors are usually built with one or two cylinders.

49. The Compressor Housing Assembly

The compressor body housing assembly is a series of castings, made of a very close grain cast iron. The housing assembly is built in two or more parts, some having the cylinder block and crankcase as two separate parts, while others have the crankcase and cylinder block integral.

Where the crankcase and cylinder block are integral, Fig. 8, there is always a removable bottom plate, through which the piston and connecting rod or eccentric strap and eccentric assemblies are inserted in assembling the compressor.

If the cylinder block and crankcase are separable, Fig. 9, there will not be a removable bottom plate, as the piston, etc., may be inserted through the opening provided by removing the cylinder block.

If the compressor is of the crankshaft type, a removable housing cover will be found on the side of the crankcase, Fig. 8. It is necessary to have this opening to provide space to install or remove the crankshaft.

If the compressor employs the eccentric shaft this removable housing cover is unnecessary and will not be found on the assembly, Fig. 9.

The cylinder walls are machined to very close tolerances and lapped to a high polish to insure a smooth surface and a close fit for the piston or pistons.

The outside of the cylinder walls are usually cast in such a manner that the surface is irregular, taking the shape of fins. This is to add additional heat dissipating surface near the point of friction between the piston and the cylinder wall. This design also tends to increase the strength of the casting at this point.

The main bearings are located in the crankcase, one on each side in the eccentric type, while one main bearing is located in the crankcase and the other in the housing cover in the crankcase shaft type.

Some manufacturers use the cast iron of the crankcase or housing cover as the main bearing surface, while others employ bronze bearings.

The bearing surfaces are scored to give even and complete oil distribution to the entire shaft and bearing surface. Due to the slow speed and complete lubrication, wear at the main bearings is usually negligible. Replacements are rare.

Eccentric Type Assembly

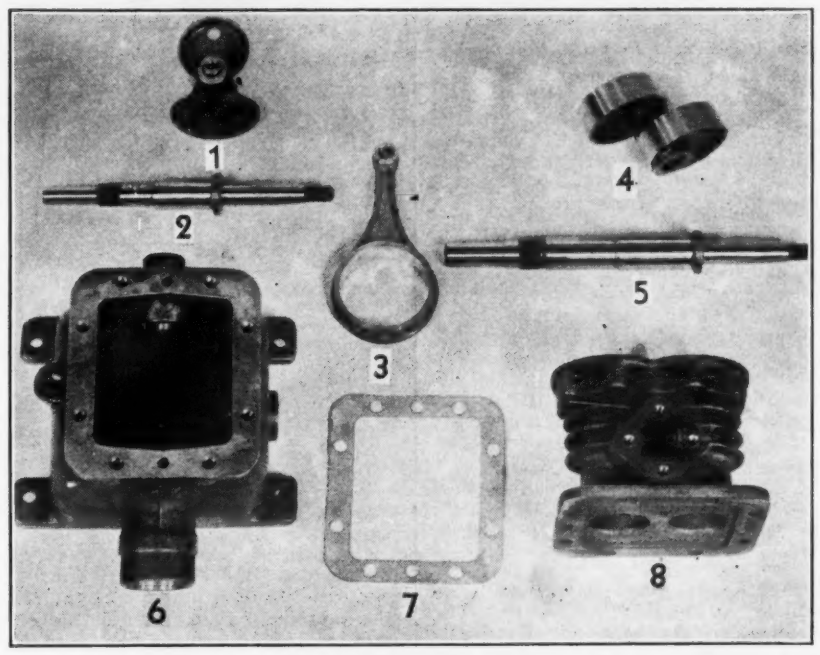

Fig. 9. Compressor housing assembly (eccentric type) and parts. (1) a single eccentric; (2) a single eccentric shaft; (3) a typical eccentric type connecting rod; (4) a double eccentric; (5) a double eccentric shaft; (6) crankcase; (7) crankcase-to-cylinder head gasket; (8) cylinder block.

50. The Crankshaft and Connecting Rod Assembly

The crankshaft is similar in construction and appearance to the type used in the automobile engine. It is made of a steel forging, which is machined to the proper tolerances for the main and connecting rod bearing surfaces. The double crank is used on the two-cylinder compressors while the single crank is used on the single-cylinder assembly.

If the flywheel employed is of light construction, a counter balance is used on the single type crank. The counter balance is not considered necessary if the flywheel is heavy, as it tends to balance the compressor.

After the shaft has been roughly machined, it is case hardened and the bearing surfaces are ground to a smooth polished surface.

The connecting rod is not unlike the automobile connecting rod except in size. The bearing cap is removable for taking up on the bearings should it become necessary. Some manufacturers use babbitt for the bearing material while others use bronze.

To take up on the bearings, the cap should be removed and filed down evenly, taking but little metal off the surface. Re-assemble the cap and tighten the bolts. Repeat this if necessary.

A tight fit such as used on the connecting rods of the automobile engine will cause heating of the compressor, and an overload on the motor. When the bearing is tightly assembled, the weight of the connecting rod should be sufficient to move the bearing.

Fig. 8 illustrates both the single and double crank, crankshaft, and a typical connecting rod.

51. Eccentric Shaft and Connecting Rod Assembly

The eccentric shaft differs from the crankshaft, insomuch that the crank or cranks and the shaft are not forged

(*Continued on Page 16, Column 1*)

Crankshaft Type Assembly

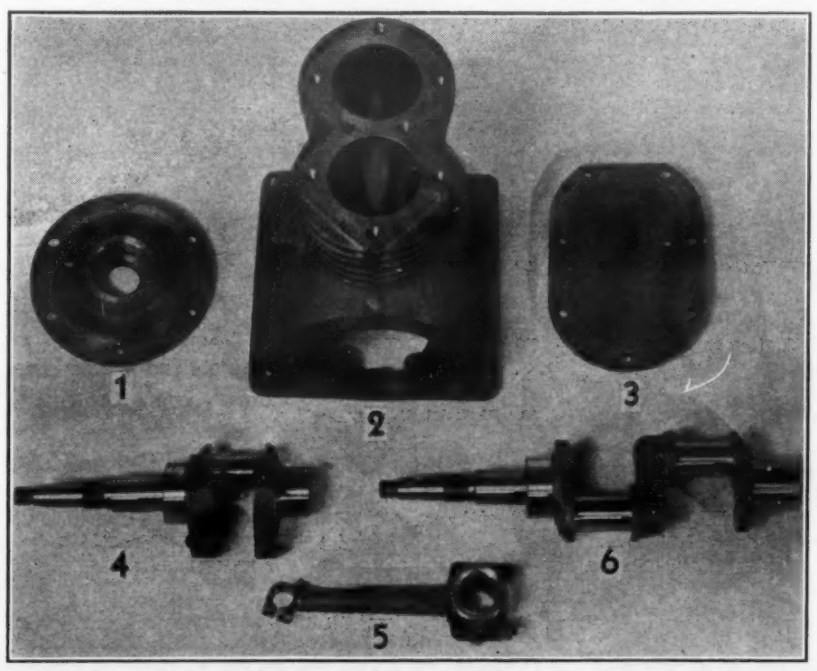

Fig. 8. Compressor housing assembly, crankshaft type, and parts. (1) bottom plate; (2) cylinder and crankcase integral; (3) housing cover; (4) single crank with counter balance; (5) typical connecting rod; (6) double crank.

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Functions of Parts Of Compressor

(Continued from Page 15, Column 5)

in one piece. The eccentric shaft is a straight shaft machined with the first main bearing surface smaller, the next surface over which the eccentric is fitted, slightly larger, and the second main bearing surface with a still larger diameter.

The main bearing surfaces are ground and polished to a smooth finish. The eccentric surface is machined, resulting in a snug or press fit to accept the eccentric.

Some models have the eccentric shaft scored to take one or more woodruff keys. In these models the eccentric is also scored to fit snugly over the woodruff keys. The keys act as the locking device between the shaft and the eccentric.

Other models use the set screw and lock nut principle to hold the eccentric to the shaft. At least one manufacturer threaded the shaft and tapped the eccentric. The eccentric was screwed onto the shaft up to a shoulder to lock it in place. The thread was found to be left handed.

The single eccentric employs the counter balance, while the double eccentric is self-balanced. The eccentric is made of cast iron and the connecting rod bearing surfaces are machined to a smooth finish. The eccentric type connecting rod is usually cast iron. Some manufacturers used bronze.

The fit between the eccentric and the rod is termed a free fit, as there is a very large bearing surface. The connecting rod is free to move sideways on the eccentric, as the piston bosses align the rod.

Fig. 9 illustrates the single and double eccentric and shaft, and a typical connecting rod. There is a right and wrong way to install the connecting rod on the eccentric. Care should be used when disassembling the eccentric type compressor, and a note made of the correct relation between the rod and the eccentric.

The eccentric and rod may be expected to give many years of quiet service, without any appreciable wear, providing the proper level of oil is maintained in the crankcase.

Pistons

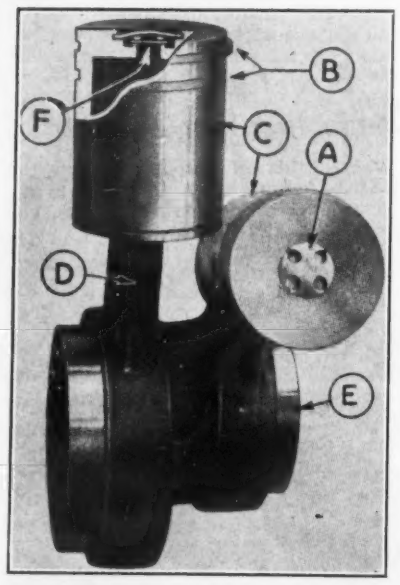

Fig. 10. Pair of pistons. (A) piston valve retainer plate; (B) piston rings; (C) piston; (D) eccentric strap connection arm; (E) eccentric; (F) piston valve.

52. Piston and Piston Valve Assemblies

The piston or pistons in the compressor are made of cast iron. Their surfaces are machined and polished to fit the smooth cylinder. There are several different designs of pistons. Pistons used in some of the early Frigidaire models were not equipped with piston rings. They were lapped to the cylinder and the fit was sufficiently close that with an oil seal they were very efficient.

Most of the later models of all manufacturers are supplied with two or more piston rings. The piston rings are cast iron and are similar in many respects to the automobile piston ring.

Fig. 10 illustrates a set of Frigidaire pistons showing the rings, piston valve, eccentric, and connecting rods. Note the piston valve, which is a thin steel disc held in place by a retainer plate.

This piston valve, commonly known as the suction valve raises on the down, or suction stroke, of the piston allowing the refrigerant vapor from the crankcase and suction line to pass up through the opening to fill the cylinder chamber.

When the piston has completed its suction stroke and starts on the up, or compressor stroke, this piston valve closes, trapping the vapor above the piston. As the compressor stroke is continued the vapor is forced up through the discharge valve and the process continued.

The piston valve plays a most important part in the function of the compressor. It is imperative that this disc properly seat to form a tight seal on the compression stroke. If this seal is broken, the compressor becomes inefficient. There are many different designs of piston valves, but they all serve the same purpose.

By carefully examining the piston valve before dismantling it, the service man should be able to determine the best methods of repairing it.

Piston valve retainers of different design are held in place in many ways. When the retainer is removed, the disc should be inspected for black marks, or scores, and the valve seat should also be examined.

If the disc is not seating properly, the valve seat should be ground with a very fine valve grinding compound, either with the disc or with a flat steel tool. When the seat has been properly ground it should be cleaned of all traces of the compound and a film of compressor oil applied. The disc should then be examined and if worn or grooved, it should be replaced with a new disc. If the disc is not worn and is to be used over again, it should be polished with a mixture of bon-ami and oil on a piece of plate glass. When it has been cleared of all scratches or pits, it should be cleaned and put into position on the valve seat.

By revolving the disc on the valve seat with the finger or tool any irregularities may be noticed. If the seat or seal looks perfect, the valve may be expected to hold tightly. When the disc and retainer has been replaced, check the disc for movement. It must have a slight up and down movement, or lift.

Fig. 11 illustrates a typical piston valve assembly. This type employs a small steel spring between the valve plate or disc and the retainer. This is typical in many makes, while others do not use the spring, depending upon the pressure during the compression stroke to close the valve.

The piston pins used in the refrigeration compressor are steel, hardened and ground to very close tolerances. There are three popular methods employed for holding the piston, piston pin, and connecting rod together.

One design which also is common in the automobile engine is to clamp the connecting rod to the pin. The bearing surface or points of friction are in the piston bosses. This design is illustrated in Fig. 12. The connecting rod is aligned both by the bosses on the crankshaft and the bosses in the piston. The distance between the connecting rod and the piston bosses is not sufficient to allow the ends of the piston pins to strike the cylinder wall. This design is most common with the crankshaft type of compressor.

Another design has the bearing surface in the connecting rod, while the piston pin is fit tightly into the piston bosses, and locked into place with a cotter pin or some similar locking device. The point of friction in this case being between the connecting rod and the piston pin. The piston bosses align the rod.

Still another design uses the bearing surface of both the piston and the connecting rod. This arrangement is known as the full floating pin as it is not locked into place, being free to move both in the connecting rod and piston. Where this design is employed, which may be in either the eccentric or crankshaft type, the ends of the piston pin are fitted with a copper plug which has a large rounded head. The copper, being softer than the cylinder walls, may come in contact with the cylinder walls without scoring or scratching them.

Some wear may be expected at the piston pins for they are further removed from the oil bath than the crankshaft or eccentric shaft and the other working parts of the compressor.

New piston pins may be installed, but as the wear is usually distributed between the pin and the bearing surface in the piston and connecting rod, it is advisable to ream the bearing and use an oversize pin.

Many service shops are equipped to do this work, or the better machine shops may be expected to do the job very accurately. A tight fit should not be expected. The pin should be free to move with a slight pressure with the fingers.

As compared with the automobile engine, the pistons and rings in the compressor will give many years of efficient service without any noticeable wear providing the proper oil level is maintained in the crankcase.

Piston Valve Assembly

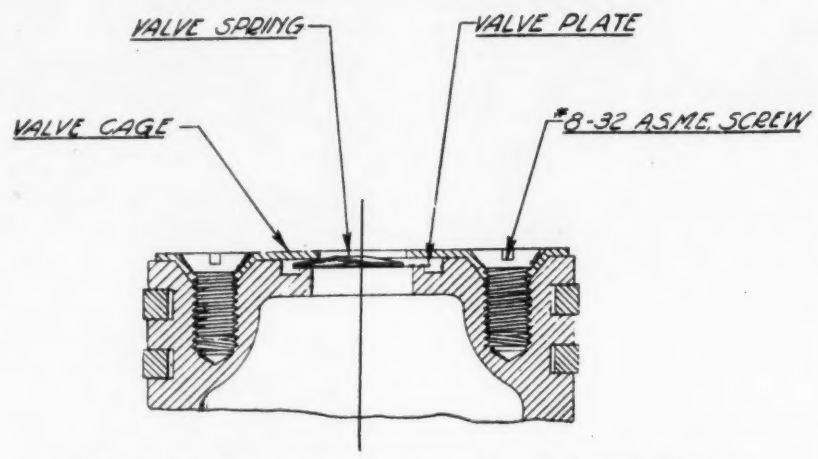

Fig. 11. Typical piston valve assembly (Universal Cooler).

Piston Pin & Connecting Rod

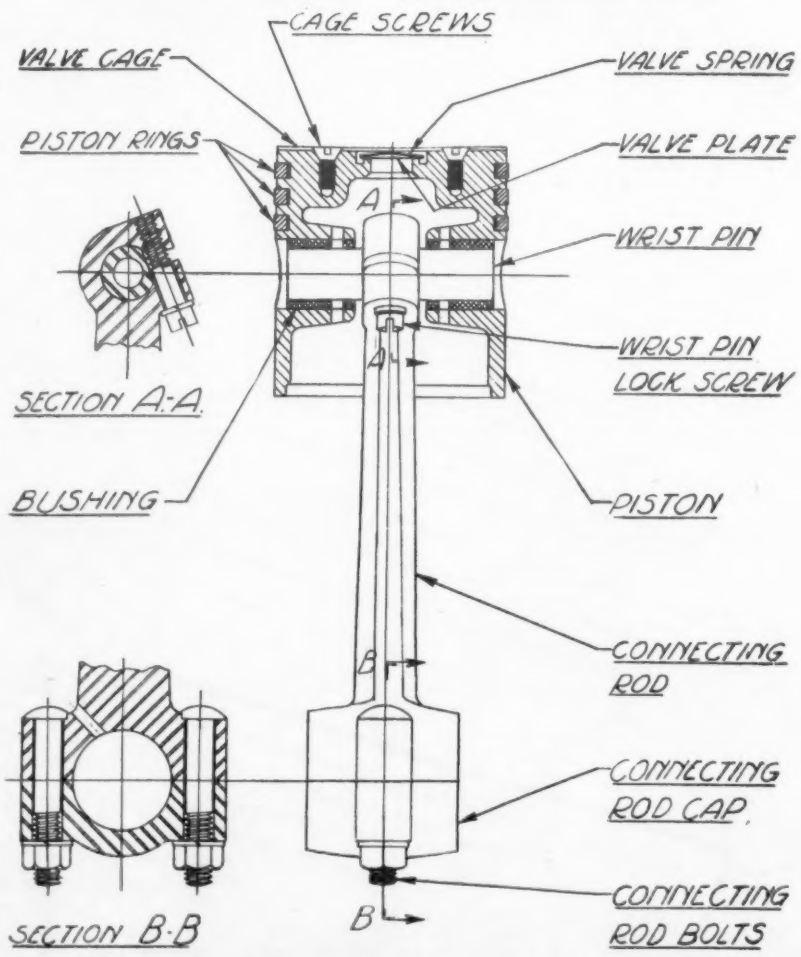

Fig. 12. Design for holding the piston, piston pin, and connecting rod together (Universal Cooler).

SERVICE OPERATIONS

A SERIES OF LESSONS OUTLINED FOR THE USE OF THE SERVICE MANAGER IN INSTRUCTING BEGINNERS IN SERVICE WORK

Lesson No. 3
Evacuating the Complete System
(Frigidaire Models T-5, L-5, EE5, etc.)

By K. M. Newcum

REASON:

If a job is found to be completely discharged, that is absolutely void of refrigerant, and has been out of service or actual operation for an unknown length of time, it is highly recommended that the complete system be completely evacuated before any refrigerant is added, as you have no way of knowing whether or not the system contains air and the surest and the safest way to proceed is as follows:

PROCEDURE:

A. Attach compound gauge side of the combination gauge set to the service valve on the side of the compressor body. Do not attach the pressure gauge side of the compound at this point.

B. Remove the ¼ in. pipe plug from the side of the compressor head and insert a ¼ in. angle valve (same as will be found on side of compressor) and tighten. Insert ¼ in. pipe to ¼ in. S.A.E. (flare) fitting into opening of ¼ in. angle valve and tighten.

C. Connect purging or discharging line to ¼ in. flare fitting, but do not submerge in lye water at this point.

D. Close discharge shut-off valve on head of compressor all the way to the right.

E. Open liquid line shut-off valve all the way to the left.

F. Prepare a solution of lye water, using one pound of lye and about one gallon of water. Refer to Lesson No. 7.

G. Submerge discharge line in lye water, open the ¼ in. angle valve, (item A), and *immediately* put the machine into operation.

H. Watch the pressure on the compound gauge as it should constantly diminish. After the compressor has pulled a 25 in. or lower vacuum on the system, close the ¼ in. angle valve, disconnect the discharge line from the valve fitting, and stop the compressor.

I. Check with instructor.

Note: This operation merely covers the process of evacuating the system, and if the above steps were followed correctly, all the air, refrigerant, and other foul gases will have been discharged from the job, and it is then ready to receive a fresh charge of refrigerant which will be explained in a separate lesson.

However, replacement is not uncommon. The fit should be comparatively close, but not tight. Some allowance should be made for expansion from heat, but the heat in the compressor is considerably less than in the automobile engine, where combustion is taking place.

It is not considered common practice to regrind or rebore the cylinders, as the new piston will usually take up the wear, and provide an adequate seal for efficient displacement. It is recommended that new rings be used when necessary. A gap of at least .0005 in. should be allowed for expansion to prevent binding.

53. Discharge Valve Assemblies

The discharge valve is one of the check valves between the high pressure side of the system and the low pressure side. It is properly named discharge valve for it is through this valve that all of the refrigerant vapor is forced and discharged from the compression chamber above the piston and piston valve on each compression stroke of the piston into the high side of the system.

Its importance is two-fold. First, it

(Concluded on Page 17, Column 1)

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Functions of Parts Of Compressor

(*Concluded from Page 16, Column 5*)

maintains a seal between the high side and the low side while the machine is on the off cycle (not operating), thus preventing any vapor previously discharged from leaking back into the cylinder chamber, and at the same time it is maintaining a pressure on the refrigerant in the liquid receiver to keep it in a liquid state.

Second, it opens with each compression stroke of the piston, on the on cycle (while the machine is in operation) and immediately closes at the end of each compression stroke to prevent a leak into the cylinder chamber when the piston starts down or on the suction stroke.

The discharge valve is usually a thin steel disc or reed mounted on a plate and held in place with a retainer. Figs. 13 and 14 show two discharge valve assemblies used on single cylinder compressors, and which are of the reed type.

Fig. 15 illustrates the disc type. The grinding or lapping of these discs or reeds is very much like the piston valve.

Fig. 16 is a cross section view of a two-cylinder Frigidaire compressor. The discharge valves may be seen immediately above the pistons, mounted on the discharge valve plate which is bolted to the cylinder. The discharge valve employed in this model is of the spiral reed type, held in place by two cap screws in the center of the valve plate. A study of the drawing will reveal the action of the discharge valves.

In designing the compressor, the clearance between the top of the piston and the discharge valve plate is usually held to .005 in. This is to assure complete discharge of each cylinder of vapor on each compression stroke. The greater this distance, or the more space between the top of the piston and the discharge valve plate, the lower is the efficiency of the compressor.

Where this space is great, a portion of the vapor compressed by the piston will not be forced through the discharge valve, but will re-expand in the cylinder chamber on the suction stroke, thus partially filling the chamber, preventing it from being filled with a new supply from the low side of the system.

This clearance is usually governed by the thickness of the gasket between the valve plate and the cylinder, as the piston may come flush with the top of the cylinder. Care should be exercised in the thickness of the gasket selected at this point.

This distance may also be regulated by the thickness of the gasket between the cylinder body and the crankcase in the case of the separable type such as shown in Fig. 16.

Both the discharge valve and the piston valve depend on an oil film to effect a gas tight seal. It is necessary to have sufficient oil in the crankcase, so that a small amount is always being circulated with the refrigerant. A discharge valve that is removed from a compressor that has been in operation for some time, found to be leaking, that is perfectly dry (no traces of oil on it), is a perfect indication of a shortage of oil in the crankcase.

If such a condition is found, the discharge valve should be replaced, or repaired, and sufficient oil should be added to the crankcase to be sure that oil is being circulated when the machine is again put into operation.

Reed Valve

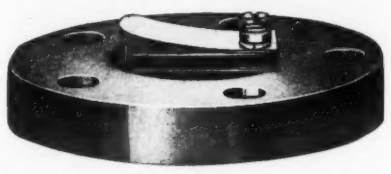

Fig. 14. Photograph of two discharge valve assemblies used on single cylinder compressor. Reed type valves.

Discharge Valve Assembly

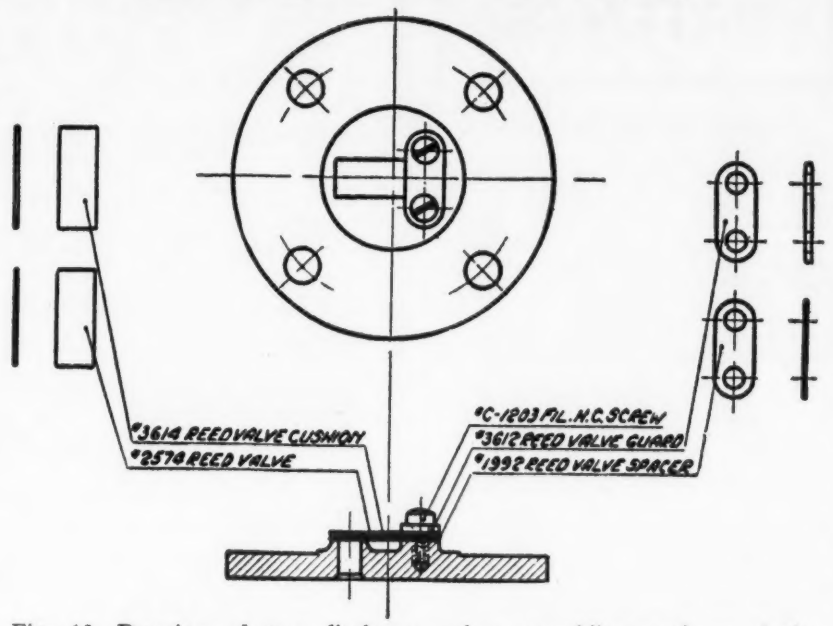

Fig. 13. Drawing of two discharge valve assemblies used on single cylinder compressor. Reed type valves.

A perfect discharge valve may leak if it is void of oil, but it would hold if an oil seal is provided.

Inasmuch as the discharge valve is mounted on a plate which is bolted between the cylinder and the cylinder head, the assembly is usually replaced by the service men on the job and the old assembly removed to the shop for repair. New gaskets should always be used, and the gasket surfaces should be perfectly clean. A film of compressor oil applied on both surfaces of the gasket will materially aid in effecting a tight joint.

As the cylinder head is on the high pressure side of the system, the bolts must be kept tight to prevent the gas from leaking out around the gasket joints both between the discharge valve plate and the discharge shutoff valve.

Traces of oil around the discharge valve plate, cylinder, and cylinder head is a good indication of a leak, as oil usually leaks out with the refrigerant.

This discussion will be continued in the next issue of ELECTRIC REFRIGERATION NEWS. The parts which will be described in this article will be stuffing box seals and direct-connected compressors.

Disc-Type Discharge Assembly

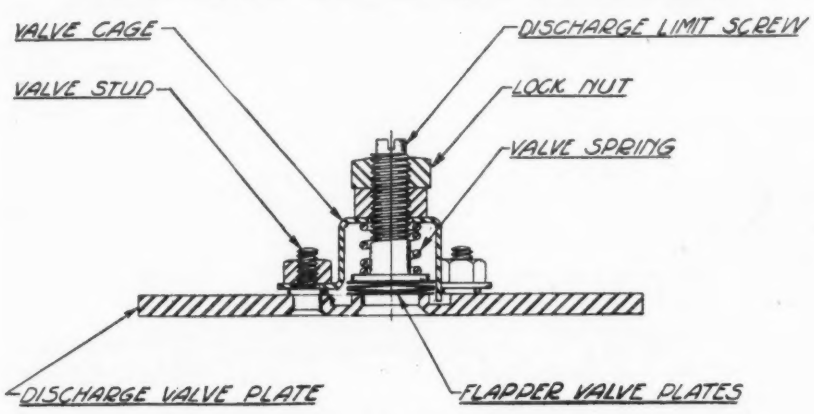

Fig. 15. Disc-type discharge valve assembly.

54. Cylinder Head

The cylinder head, like the compressor housing, is made of close grain cast iron. Its location on the compressor is immediately above the cylinder and discharge valve plate. It is to the cylinder head that the discharge shutoff valve is attached.

All of the compressed vapor passes through the port in the cylinder head, thence through the discharge shutoff valve en route to the condenser.

Refrigerator Shipments on Railroad Increase

DENVER—Freight shipments of refrigerators, furniture, wallpaper, lumber, paint, plumbing and heating materials, roofing, and plaster were 122 per cent greater on the Denver, Rio Grande & Western Railroad in February, 1935, than in February of last year, reports the assistant traffic manager of that railroad.

He attributes the increase primarily to the activity of the better housing program in states served by the line.

Open-House Party Aids Kelvinator Sales

HAGERSTOWN, Md. — Bohman-Warne, Inc., Kelvinator distributor for this territory, and its dealers, are using open-house parties to aid sales. Inaugural party was held in the distributor's display room.

The party was announced in the newspapers, on the radio, in mailed invitations, personal calls and telephone calls to users and prospects.

The party at Winchester brought several sales and at Martinsburg, W. Va. two SD models were sold each day of the party.

Frigidaire 2-Cylinder Comperssor

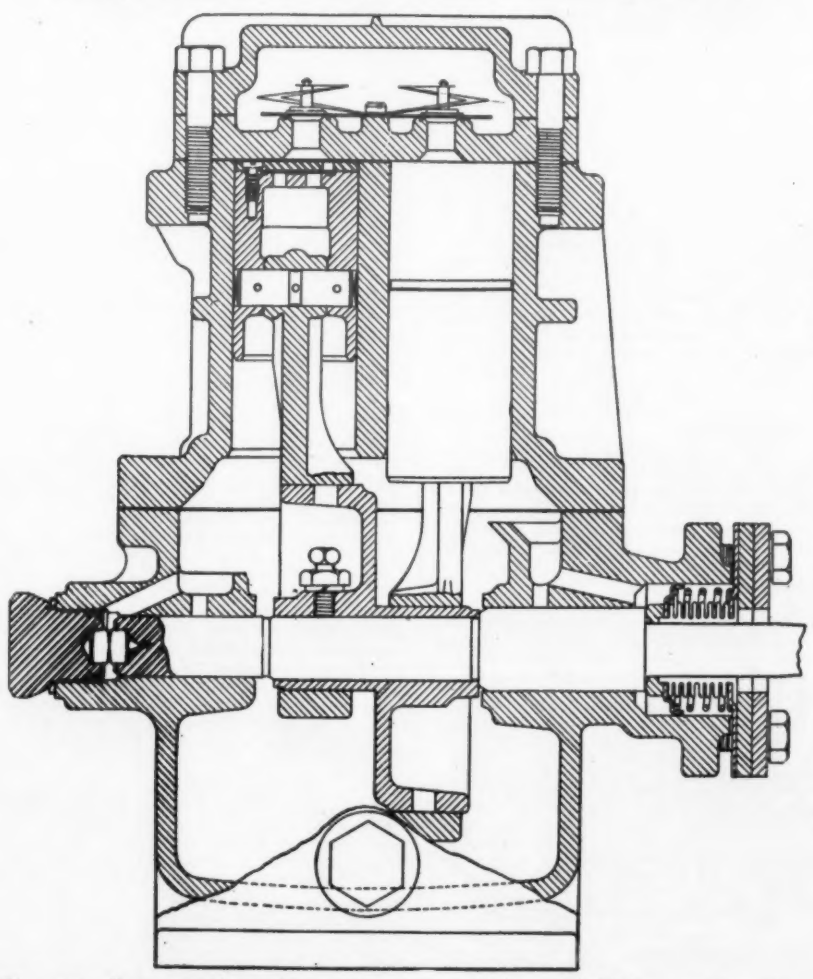

Fig. 16. Cross-section view of a two-cylinder Frigidaire compressor.

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See our advertisement on page 16

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SPANGLER COMPANY, 3337 Market St., St. Louis, Mo.
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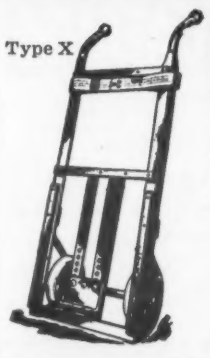

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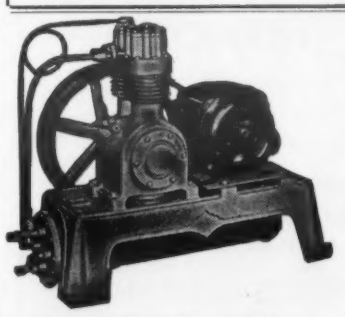

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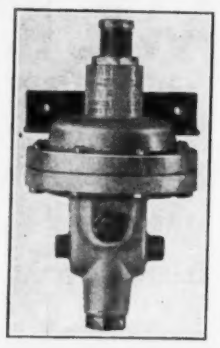

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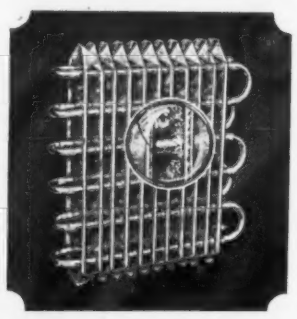

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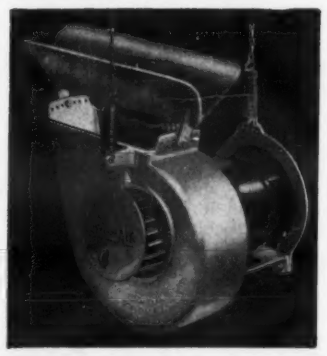

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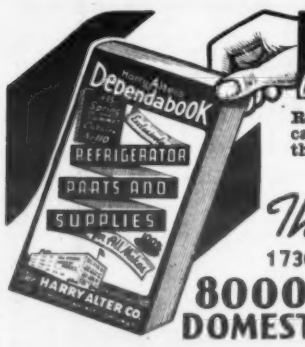

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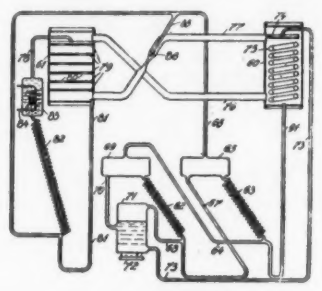
PATENTS

Issued April 16, 1935

1,997,668. ABSORPTION REFRIGERATING APPARATUS AND METHOD. Edmund Altenkirch, Alt-Landsberg Sud, Germany, assignor, by mesne assignments, to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application April 5, 1926. Serial No. 99,890. In Germany April 8, 1925. 20 Claims. (Cl. 62—119.5.)

5. Refrigerating apparatus of the absorption type including a generator, a plurality of vertically extending coils ar-



1,997,668

ranged at about the same elevation, and means for circulating liquid between and through said generator and said coils including means for causing lifting of liquid by vaporous fluid in said coils.

1,997,673. THERMOSTATIC PROTECTION FOR MOTORS. Clinton R. Boothby, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Dec. 28, 1933. Serial No. 704,303. 6 Claims. (Cl. 172—279.)

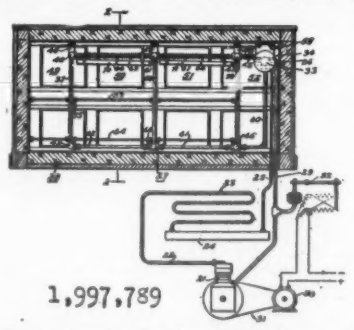
1. In combination with an electric motor having a plurality of phase-displaced energizing windings and means for deenergizing one of said windings after starting, a thermal switch controlling the energization of the motor and a heating element in heat-transferring relation to the thermal switch connected in series circuit with that winding which is deenergized after starting of the motor.

1,997,763. HUMIDIFIER. Joseph L. Boesch, Devils Lake, N. Dak. Application May 23, 1934. Serial No. 727,055. 2 Claims. (Cl. 257—241.)

1. In a device of the kind described, an elongated, cylindrical water tank having a filling port in its upper end, a heating drum within the lower end of the tank, inlet and outlet pipes leading into and out of the drum through the walls of the tank, a gas deflector within the drum opposite the mouth of the lead-in pipe, an anti-splash device arranged above the heating drum the same including spaced vanes and a top spaced below the upper end of the tank, thereby forming a vapor chamber between the top of the anti-splash device and the upper end of the tank, a vapor tube leading from the vapor chamber, means for connecting the vapor tube to the carburetor of an internal combustion engine, and means for connecting the inlet pipe of the heating drum with the exhaust pipe of an internal combustion engine.

1,997,789. REFRIGERATING APPARATUS. Charles F. Henney, Dayton, Ohio, assignor by mesne assignments, to General Motors Corp., a corporation of Delaware. Application April 25, 1931. Serial No. 532,871. 7 Claims. (Cl. 62—99.)

7. Refrigerating apparatus including a cabinet having a compartment to be cooled, a plurality of individual plate type

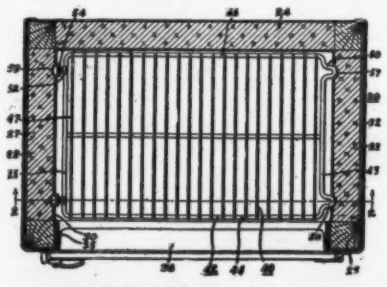


1,997,789

cooling elements having impervious walls, said cooling elements being vertically disposed and horizontally spaced in said compartment to divide the compartment into a plurality of distince chilling chambers, means for storing food within said chilling chambers between said cooling elements, common means for supplying refrigerant to the lower portion of each of said plate type cooling elements and for withdrawing refrigerant from the upper portion of each of said plate type cooling elements.

1,997,793. REFRIGERATING APPARATUS. Harry B. Hull and Curtis E. Kampman, Dayton, Ohio, assignors, by mesne assignments, to General Motors Corp., a corporation of Delaware. Application Sept. 20, 1930. Serial No. 483,177. 2 Claims. (Cl. 211—153.)

1. A refrigerator cabinet having an inner sheet metal lining member, said lining member having deformed portions on



1,997,793

INSTALLATION OPERATIONS

A SERIES OF LESSONS OUTLINED FOR THE USE OF THE SERVICE MANAGER IN INSTRUCTING BEGINNERS IN INSTALLATION WORK

Lesson No. 3—Making a Hand Bend on ½-inch Copper Tubing

By K. M. Newcum

MATERIAL NEEDED:

One piece of ½ in. tubing 24 inches long.

PROCEDURE:

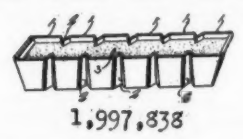
1. Straighten tubing perfectly straight.
2. Mark tubing where bend is to be made.
3. Grip the tubing with both hands, one on each side of the mark, placing the thumbs directly underneath the tubing where the tubing is to be bent.
4. Draw the tubing with both hands, bending it over the thumbs.
5. Bend slowly, watching for kinks.
6. Bend until you have reached a 90° bend, then stop.
7. Never attempt a very close bend with the hands.
8. Check with instructor.

Note: Other sizes are to be bent in the same manner.

opposite wall sections, a shelf structure including a rectangular member having a supporting surface and a bounding member extending around its perimeter, said bounding member having deformed portions on one side provided with means for engaging some of the deformed portions of the lining member to support the shelf structure at one side and projections on the opposite side of the bounding frame provided with adjustable means for engaging other deformed portions of the lining member to support the shelf on the opposite side.

1,997,838. ICE TRAY. Guy L. Tinkham, Detroit, Mich., assignor, by mesne assignments, to McCord Radiator & Mfg. Co., Detroit, Mich., a corporation of Maine. Application Dec. 1, 1932. Serial No. 645,215. 7 Claims. (Cl. 62—108.5.)

1. An ice tray for use in mechanical refrigerators, comprising a body having connected bottom, side and end walls,



1,997,838

said body consisting of flexible sheet material bent to provide said walls, and integral portions of the bottom and the side walls at spaced points along the length of the tray being displaced into the tray to provide ribs dividing the tray into a series of connected cells and expansion joints between them whereby the mass frozen in the tray will be scored at the ribs and be fractured at the scoring on flexing the tray at the ribs.

1,997,839. METHOD OF MAKING ICE TRAYS. Guy L. Tinkham, Detroit, Mich., assignor, by mesne assignments, to McCord Radiator & Mfg. Co., Detroit, Mich., a corporation of Maine. Original application Dec. 1, 1932. Serial No. 645,215. Divided and this application Aug. 23, 1933. Serial No. 686,328. 6 Claims. (Cl. 153—13.)

1. The method of forming an ice tray having bottom, side and end walls and adapted for use in a mechanical refrigerator, consisting in forming the bottom and the side walls of the tray from a blank of sheet material by folding the blank to provide said walls, fitting the end walls in the tray at the ends of the same, and providing expansion joints in said bottom and side walls in spaced relation along the length of the tray to divide the tray into smaller units or sections and to permit flexing of the tray at said joints.

1,997,936. REFRIGERATOR CONTAINER. William F. Kiesel, Jr., Hollidaysburg, Pa., assignor to The Pennsylvania Railroad Co., Philadelphia, Pa., a corporation of Pennsylvania. Application Oct. 10, 1932. Serial No. 636,968. 3 Claims. (Cl. 62—91.5.)

1. In a refrigerator container, a casing lined with insulating material, a bunker extending across said casing beneath the top thereof, said bunker affording a support for solid carbon dioxide or a like refrigerant, and isolating the refrigerant space from the remaining space within the casing, and a box-shaped foraminous flow-restricting partition suspended at the top of the casing at a spaced distance beneath said bunker and forming therewith a relatively narrow and unobstructed passage for the circulation of air, the perforations of said foraminous partition being relatively small and numerous and distributed substantially over a horizontal cross section of the container, whereby said partition serves to control percolation of a well disseminated body of air from the space above it to the space below it.

1,998,223. PRESSURE REGULATOR. Walter V. Czarnecki, Jr., Eddington, Pa., assignor to Walter Czarnecki, Sr., Mary Czarnecki, Nellie Wojowski, Wesley Czarnecki, Stanley Czarnecki, Walter V. Czarnecki, Jr., and Casimar Czarnecki, a copartnership, Eddington, Pa., doing business as Eddington Metal Specialty Co. Application March 29, 1934. Serial No. 717,906. 6 Claims. (Cl. 137—153.)

1. A pressure regulator comprising a housing having an inlet port, an outlet port and a bypass port ,a valve seat in communication with the outlet port, a block mounted and movable within the housing and carrying a vave adapted to close the valve seat, a sleeve mounted within the housing having an end provided with a conduit, said block having conduits therethrough adapted to communicate with the conduit of the sleeve, a valve positioned to close the conduit of the sleeve, resilient means for moving the block to close the valve carried thereby, resilient means to close the valve within the sleeve, and means to regulate the pressure on said last mentioned valve.

1,998,284. AIR-CONDITIONING SYSTEM. Herbert Matthews and Robert J. Seator, Battle Creek, Mich. Application Sept. 18, 1933. Serial No. 689,840. 9 Claims. (Cl. 261—90.)

1. An air conditioner comprising a dished centrifugal water impeller arranged to rotate about a horizontal axis, and means for supplying the interior of said impeller with water comprising a stationary fitting having a lateral inlet and a pair of diverging nozzles terminating in end outlets in a plane parallel to and spaced from the plane of the impeller and having a rearwardly extending arm, a cross bracket and a clamp associated with said cross bracket for clamping the arm of said fitting in adjusted position with the nozzles spaced from the impeller as desired.

REISSUE

19,534. REFRIGERATING APPARATUS. Harry B. Hull, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp., a corporation of Delaware. Original No. 1,885,264, dated Nov. 1, 1932. Serial No. 465,021, June 30, 1930. Application for reissue May 19, 1933. Serial No. 671,934. 10 Claims. (Cl. 62—103.)

8. Room cooling apparatus comprising a refrigerant evaporating member, an air circulating member circulating air over said evaporating member, a refrigerant compressing member removing refrigerant from said evaporating member, a refrigerant condensing member receiving and condensing compressed refrigerant from said compressing member, a refrigerant expansion member receiving refrigerant from said condensing member and introducing it into said evaporating member, a moisture condensate receiver for said evaporating member, a condensate pump utilizing forces inherent in the apparatus for removing moisture from the room and a pipe for discharging said condensate from said apparatus by said pump.

19,540. PRESSURE REDUCING VALVE. Paul C. Temple, Decatur, Ill., assignor to A. W. Cash Co., Decatur, Ill., a corporation of Delaware. Original No. 1,934,832, dated Nov. 14, 1933. Serial No. 560,704, Sept. 2, 1931. Application for reissue Aug. 15, 1934. Serial No. 740,654. 8 Claims. (Cl. 50—26.)

1. A device for controlling the pressure of a refrigerant fluid, comprising a casing providing a high pressure side and a reduced pressure side, a valve device for controlling the passage of fluid from the high pressure side to the reduced pressure side and including a valve seat and a valve member cooperating therewith, and means providing a spiral flow-resisting path for the fluid after it has passed said seat to prevent wiredrawing.

PUBLISHER'S STATEMENT OF CIRCULATION

This is to certify that the average circulation per issue of Electric Refrigeration News for the six months' period July 1 to and including Dec. 31, 1934, was as follows:

Copies sold	6,619
Copies distributed free	531
Total	7,150

Signed F. M. Cockrell, Publisher.

Subscribed to and sworn before me on this 29th day of April, 1935.

Roy N. Sharp.

(My commission expires June 29, 1938.) Notary's Seal.

BUYER'S GUIDE

MANUFACTURERS SPECIALIZING IN SERVICE TO THE REFRIGERATION INDUSTRY

SPECIAL ADVERTISING RATE (this column only)—$12.00 per space.
Payment is required monthly in advance to obtain this special low rate.
Minimum Contract for this column—13 insertions in consecutive issues.

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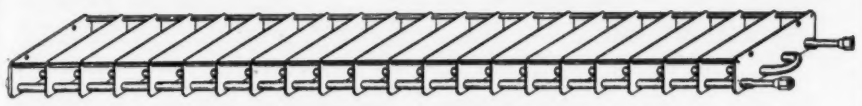

Designed for all BELOW-FREEZING Applications.
A Heavy Duty coil—fins and tubing on 2" centers.
For Chilling Rooms, Ice Cream Hardening and Storage, Freezing Compartments of all types. Especially adapted for water and beverage cooling.
Better and cheaper than plain pipe coils.

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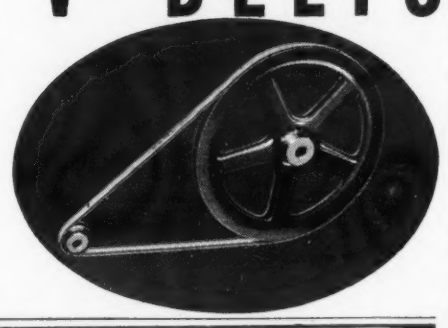

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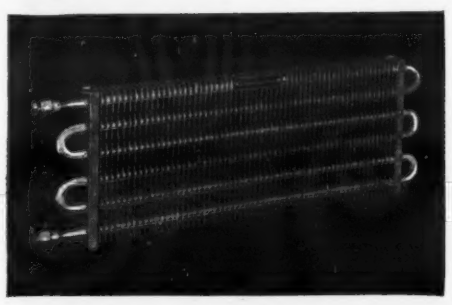
1342 WEST LAKE ST., CHICAGO



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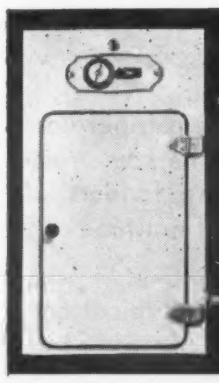

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	Electric Refrigeration News (weekly)	1935 Refrigeration Directory and Market Data Book (2 volumes)	Both Electric Refrigeration News and Refrigeration Directory
1 subscription	$3.00	$5.00	$6.50
5 or more each	2.75	4.50	6.50
10 or more each	2.50	4.00	6.50
20 or more each	2.25	3.50	5.75
50 or more each	2.00	3.00	5.00
75 or more each	1.75	2.50	4.25
100 or more each	1.50	2.00	3.50

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☐ Enter my subscription to Electric Refrigeration News for one year (52 issues).
☐ Send the 1935 Refrigeration Directory and Market Data Book (2 volumes).
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In Care of .....

Street Address .....City and State.....

We sell the .....refrigerator and .....
(Please indicate other products or principal line of business.)
5-1-35

QUESTIONS

Calcium Oxide

No. 2210 (Manufacturer, Indiana)—"Will you please let us have the names of the sources of calcium oxide for liquid line dryers?"

Answer: Calcium oxide is manufactured by Lehigh Lime Co., 831 Conway Building, Chicago; the Mallinchrodt Chemical Works, Second and Mallinchrodt Sts., St. Louis; and J. T. Baker Chemical Co., North Phillipsburg, N. J.

Production Figures

No. 2211 (Manufacturer, Delaware) "During 1934, you regularly published in ELECTRIC REFRIGERATION NEWS statistics on both the production and sale of electric refrigerators, by months. The figures on the monthly production of electric refrigerators were of especial interest to us, because of the large volume of finishing materials we sell for this purpose.

"During 1935, we note that you have not been giving statistics on the monthly production of electric refrigerators, although you have continued to publish the monthly sales figures.

"We are wondering whether you still have available the monthly production figures. If you do, would it be possible to supply us with these figures, each month, even though you do not publish them in ELECTRIC REFRIGERATION NEWS?"

Answer: The figures on the monthly production of electric refrigerators which were published during 1934 were released by the Refrigeration Division of the National Electrical Manufacturers Association.

At present, Nema is making certain revisions in the report form to be used during 1935, and to date we have not received complete information as to just what information their bulletins will include.

You have probably noted that the reports for January and February of 1935 give only sales of household refrigeration equipment. The reports covering sales of commercial equipment and stocks held by factory branches and by distributors and dealers have not been received as yet for the first two months of the year.

We have not been informed as to whether the production figures will again be supplied for 1935, but if they are, they will be published in ELECTRIC REFRIGERATION NEWS.

Defrosting Clocks

No. 2212 (Manufacturer, Pennsylvania)—"Friends of ours in England are interested in receiving information regarding automatic electric clock defrosting devices manufactured in this country. Could you give me any information as to who manufactures such devices to enable me to purchase one or two of different makes."

Answer: You can obtain information on automatic electric defrosting clocks from the Westinghouse-New Haven Clock Co., New Haven, Conn., or the Sparks-Withington Co., Jackson, Mich.

Clocks of this type were formerly made by the Bryant Electric Co., 844 W. Adams St., Chicago, which has discontinued this line. They have referred us to the above mentioned companies as the best sources of supply.

1935 Directory Price

No. 2213 (Distributor, N. Y.)—"We are desirous of obtaining the new 1935 edition of your REFRIGERATION DIRECTORY. I am not sure but believe our subscription runs until the latter part of this year. Tell us what we can do to take advantage of the lowest obtainable price."

Answer: The 1935 DIRECTORY is being published in two volumes and sells for $5 for the set of two books. The combination rate for a one year subscription to ELECTRIC REFRIGERATION NEWS and both volumes of the DIRECTORY is $6.50. You may take advantage of the combination rate by advancing your subscription another year.

Bidding for Bank Job

No. 2214 (Manufacturer, Pennsylvania)—"We are seeking precedent in a situation that involves in this particular case, a banking institution which has ruled that henceforth only concerns who had accounts with that particular bank would be considered in competitive bidding for their work.

"We thought that perhaps at some time or other some of your readers might have reported similar experiences as between suppliers and buyers. If you have any precedent or could suggest a successful method of handling such cases, we certainly would appreciate your advice."

Repossession Data

No. 2215 (Dealer, Ohio)—"Can you give us statistics on the number of refrigerators financed on a deferred basis and the percentage of repossessions."

Answer: We do not have this information, but you may get help from the following finance companies:

Bankers Commercial Security Co., Inc., 270 Madison Ave., New York City; C.I.T. Corp., 1 Park Ave., New York City; Commercial Credit Co., First National Bank Bldg., Baltimore, Md.; Credit Utility Co., Inc., 122 E. 42nd St., New York City; Refrigeration Discount Corp., 14250 Plymouth Rd., Detroit.

Display Case Makers

No. 2216 (Dealer, Michigan)—"Will you please send me a list of display case manufacturers in the United States and addresses. There is one particular company in Indianapolis that I know of but do not know the name and thought probably you would gladly give me a list of them in the United States."

Answer: Probably Holcomb & Hoke Mfg. Co., 1545 Van Buren St., Indianapolis. Other manufacturers of display cases are listed on page 174 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

Gauge Dials

No. 2217 (Manufacturer, N. Y.)—"We are manufacturers of pressure gauges and compound gauges for use on refrigeration service work.

"Recently we have had calls for supplying these gauges with the regular pressure and vacuum scale and with corresponding temperature scales for sulphur dioxide, methyl chloride and Freon. While there is no particular difficulty in our supplying a dial having a pressure scale and corresponding temperature scales of the three materials, we are interested in knowing of what assistance the temperature scales of these materials corresponding to the pressure scale, would be to the service man.

"Can you favor us with information along this line?"

Answer: An engineer who uses gauges in his work, and who is quite close to the problems of the service man, recently expressed an opinion to us that a gauge with a corresponding temperature scale would have several advantages, especially in air-conditioning operations.

Types of Customers

No. 2218 (Advertising firm, New York)—"Some time ago an article appeared in ELECTRIC REFRIGERATION NEWS on the types of people that have been their best customers.

"We are anxious to get hold of this issue in order to use some of these statements. To help you find the issue, one of the statements had the caption—"Danforth Finds Lower Income Class is Buying." This paragraph went on to say, "N. M. Forsythe, manager of the Danforth Refrigeration Co., Westinghouse distributor, told us that this season has brought an increased number of sales to people in the $150-$200 a month income class, 5½ cu. ft. models being popular with these buyers."

Answer: The article to which you refer was among the dealer field reports published in the spring of last year and was in the April 18, 1934 issue.

Cabinet Construction

No. 2219 (Dealer, Florida) — "We would like to have you furnish us with specific information and data concerning the construction of the several leading electric refrigerators.

"We are interested in the cabinet construction and will thank you to advise those boxes using wooden frames as well as those using metal and why, the comparative cost of the wooden and metal construction, the alleged advantages of using both, and all other information you have at your disposal concerning the various cabinet constructions."

Answer: Specifications of household electric refrigerators as published in the March 20 issue tell what models have metal frames and what makes have wood frames.

In the March 6, 1935 issue under the heading of "Service" there is an interesting article dealing with various types of cabinet construction, although it does not specify the types used in the various trade makes. In the Nov. 8, 1933 issue, was published a series of articles dealing with various kinds of insulation used in household electric refrigerators.

List of Distributors

No. 2220 (Manufacturer, Wisconsin) —"Do you have a list of refrigerator manufacturers and distributors, and if so, is it available to us? Will you kindly give me this information as soon as possible?"

Answer: Manufacturers of household electric refrigerators are listed on pages 235, 248, and 249 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

We do not have a list of distributors available for public release, as the lists which the manufacturers furnish to us are given with the understanding that they be used for subscription promotion purposes only.

CLASSIFIED

RATES: Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

FRANCHISE AVAILABLE

WANTED, DISTRIBUTORS—Wanted, district distributors to sell to retail trade exclusively, new and reconditioned electric and gas refrigerators of nationally known makes, at greatly reduced prices; fully guaranteed. Full protection to territory rights. For domestic and export trade, catalogues, prices and specifications on request. Wanted, resident buyers to purchase for us in quantities, old and new refrigerators. Exclusive territory. Interstate Refrigerator Corp., 96 Fifth Ave., New York, N. Y.

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MANUFACTURERS of replacement refrigerator parts, accessories and supplies can secure an outlet in two of the larger eastern cities for their products. We are interested in what you have to offer from a warehouse or distributor standpoint. Our business with the independent service man is already established. Box 695, Electric Refrigeration News.

EQUIPMENT FOR SALE

ATTENTION: Dealers and Service Men—Rebuilt Mayson Expansion Valves, $1.00. Rebuilt American Radiator Expansion Valves, $1.65. Fully guaranteed. Also Ranco controls, type DH and others, $1.95. Other surplus, miscellaneous parts in stock, such as legs, shelves, porcelain evaporator baffles, at ridiculous prices. Hundreds of fully reconditioned, nationally-known refrigerators, priced right for retail re-sale. Federal Refrigerator Corp., 437 Eleventh Ave., New York, N. Y.

ISOBUTANE: We offer purest and dryest Isobutane for the most exacting scientific purposes; in your 80 lb. cylinders at $0.75, in our 120 lb. cylinders, $0.70, in small lots at $1.00 per pound. The Standard Refrigeration Co. of Pittsburgh, 1148 Dohrman St., McKees Rocks, Pa.

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Ninth Year

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